Industrial Equipment News

FOUNDED 1933

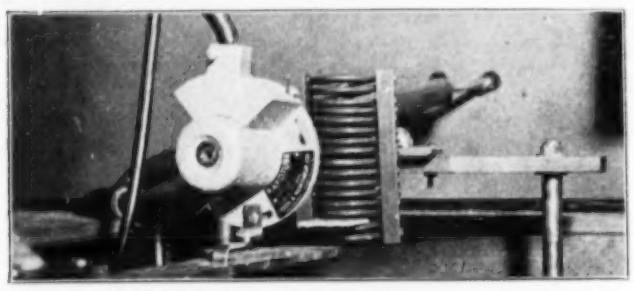
ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 1152**

PYROMETER . . Optical design to control work heated by induction

Source: LEEDS & NORTHRUP CO.
4934 Stenton Ave., Philadelphia 44, Pa.



It "sees" the work inside the coil

The company announces development of a new design in its line of Rayotube optical pyrometers to permit focusing on a very small target area. The new unit is particularly suited for application in induction heating in which it is sighted on work visible between two turns of an induction coil. Complete equipment includes a Speedomax recorder or controller to read temperature and actuate the heat control equipment.

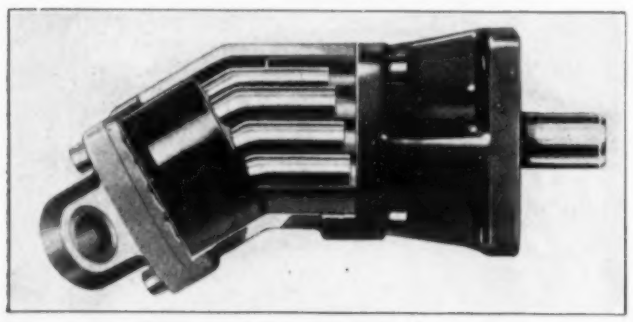
The new Rayotube can measure temperatures from 800 deg. F. up. It can focus through an opening as small as 0.1 in. between the turns of a coil. Its housing will withstand ambient temperatures to 350 deg. F. When suddenly exposed to radiation from a work piece, it will indicate 99 per cent of true temperature within 0.6 second.

Time lag on change in temperature is within 0.15 second behind the work. The optical equipment is hermetically sealed against entrance of dirt, dust or corrosive fumes. Price range is between $1,100 and $1,300 depending upon whether the equipment is to record only or to record and control.

If you write maker identify as **IEN - 1153**

PUMP . . Rotary design, tubes telescope in rotating blocks

Source: EASTMAN PACIFIC CO.
2318-22 E. 8th St., Los Angeles 21, Calif.



No lubrication needed

Positive action is provided to handle fresh or salt water, oil, gasoline, chemicals at maximum pressure to 500 lb. and recommended working pressure to 250 lb. by a ring of nine tubes in this new Dudley V-9-100 pump. The tubes are bent to an angle and ride in two heads inside the body as shown in the cut-away view. One head is driven by a shaft at the right hand end. The other head, on the combination intake and discharge end, is driven by the tubes.

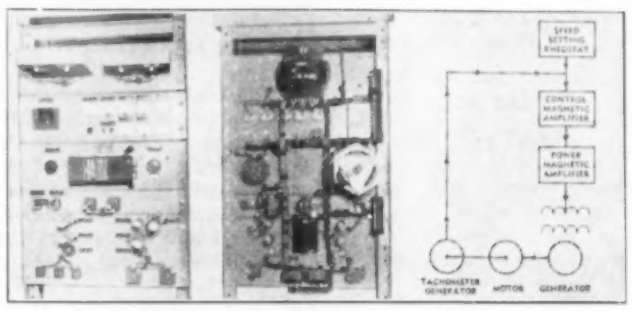
They telescope with reference to the blocks, as the blocks rotate, to draw in through one opening and discharge through one on the opposite side of the left hand head. Output rating is 2.1 gpm. at 1,200 rpm. with a ½-hp. drive on continuous duty. It is 7.3 gpm. with a 1½-hp. drive at 3,600 rpm., also on continuous duty.

The inlet is threaded for ½-in. and the outlet for ⅜-in. pipe. Both stand at 45 deg. with the axis of the pump. A bronze or aluminum body can be specified with weights respectively at 5 and 2½ pounds. Overall length is 7¼ in. measured on the body. The shaft adds 1¼ inches. The square mounting flange at the drive end is about 2½ inches.

If you write maker identify as **IEN - 1154**

DRIVE . . Variable speed control to operate dc. motor from ac. line

Source: CUTLER-HAMMER INC.
329 N. 12th St., Milwaukee 1, Wis.



Technical data upon request

Magnetic amplifiers are employed in the place of electronic equipment in a new 2-stage speed control for motors driving industrial equipment. Speed can be held within 1 per cent of a rheostat setting over a normal operating range.

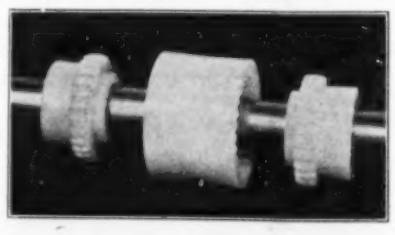
The installation employs a regulated reference voltage which is compared with a tachometer feed-back signal from the controlled motor and is fed to the magnetic amplifiers. The amplifier output supplies an auxiliary field of the generator, which is driven by its own ac. motor, thus regulating generator voltage to obtain correct regulated motor speed.

The company is prepared to engineer and supply the equipment to meet specified requirements. It can supply controls alone or with the motors and generating equipment.

If you write maker identify as **IEN - 1155**

DRIVE . . Nylon flexible coupling, geared design, ⅜ to ¾ inch bore

Source: JOHN WALDRON CORP.
P. O. Box 791-A, New Brunswick, N. J.



For your small drives

No lubrication is required and corrosion is not a factor in this new Junior gear type coupling. It consists of a Nylon sleeve with internal teeth and two identical Nylon toothed hubs fitted with keyways and set screws. Four bore sizes range from ⅜ to ¾ inch. Weight is 2¼ ounces. The coupling measures about 2¼ in. in overall length by a little under 2 in. in diameter. Hub diameter ranges from ⅞ to 1⅜ inches. An assembly with ¾-in. bore has been tested to about 1,100 in. lb. of torque in an installation involving 15 months of operation without any sign of wear.

If you write maker identify as **IEN - 1156**

ROOFS . . Liquid coating material acts as alternate for coal tar pitch

Source: RUBEROID CO.
500 Fifth Ave., Dept. BUR, New York 36, N. Y.

Based on old product formula

New Special Roofing Bitumen is announced by the company as an alternate for coal tar pitch in constructing built-up roofs with tarred felt and with gravel or slag surfacing. It offsets a present shortage of the roofing pitch. It is applied in accordance with methods and specifications governing the application of coal tar pitch and is subject to the same roof deck incline limitations as the pitch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FEBRUARY, 1953
VOL. 21 No. 2

PRODUCT FINDING INDEX

What do you need? . . . check this complete subject index for your current product needs. Asterisks (*) after page numbers mean editorial items. Others refer to advertisements.

ABRASIVES 26*, 50, 51, 99
Adhesives 107
Alloys 18
Aluminum 90
Amplifiers, Magnetic 81*
Armor, Floor 97
BAGS 33*, 78
Balancing 43, 93, 101*
Baskets 72
Battery Caps 60*
Bearings 2, 3, 20, 29, 48, 65, 75*, 96, 108
Bellows, Metal 25, 93
BELTS
Conveyor 45, 77
Dressings 19*, 55
Fastenings 47, 85, 97*
Transmissions 48, 55*, 82*, 83, 91
Benches 109
Bending 6, 10, 24, 26, 42*, 56*, 58, 66, 106
Bins 19
Blowers 13*, 21, 22, 33, 77, 107
Boards, Bulletin 105
Boilers 16*, 52, 56, 61, 107
Bolts 81
BOOTHS
Paint Spray 51, 74
Telephone 40
Boots 22*
Boring 10*, 33, 117
Boxes 6, 19, 30, 74*, 79, 91, 113
Brakes 5, 46*
BRAZING 2, 5, 10, 60
Bridges, Crossover 55, 67
Broaching 58*
Bronze 18, 20
Brushes 19, 79, 101*
Buckets, Clamshell 37, 71
BUILDINGS 45, 60, 100*
Bundling 5*
Burners 58*
Burring 65, 82*
Bushings, Drill 10, 43, 65, 84*
CABINETS 4, 31, 71
Cable, Electric 3, 15, 83*, 87
Calculating 42, 54
Cameras 57, 73
Capacitors 54
Carbon Parts 60
Cars 38
Casters 49, 69, 95
Casting 76*
Castings 82*, 119
Cement, Iron 13
CHAIN
Fittings 98
Load 65
Transmission 7, 119
Chairs 63
Charts, Instrument 104
Chemicals 82*
Chucks 57, 67
Circuit Breakers 26, 44
Clamps 8, 9*, 13, 24, 57*, 68, 78, 93*, 94, 97
CLEANING
Blast 27, 116
Blower 21, 107
Belt 101*
Drain 85*
Floor 19, 21, 22, 41, 80, 94, 98, 117*
Materials 2*, 27*, 28, 29, 37, 39*, 43, 55*, 65*, 104, 114, 117, 118
Rotary 62
Vacuum 21, 36, 41, 54*, 73, 80, 82*, 107
Vapor 54
Washing 51, 82*
Clutches 45, 65*
Coating 83*
Collars, Shaft 115
Communicating 34*, 38, 40, 59, 62, 75, 98*, 102*, 114*, 118*
Compressed Air 42*
COMPRESSORS 48*, 64, 96, 99*
Condensate Return Equipment 18, 54
Conductors, Electric 3, 15, 33, 51, 64, 76, 80*, 87
Conduit 76
Connectors, Electric 41, 43*, 47*, 47, 61*, 77, 84, 85, 87*, 88, 99, 108, 111
Construction 24*, 24, 64, 76*
Contactors 94, 101
Contacts, Electric 50, 53
CONTROLS
Electric 38*, 81*
Electronic 47*
Engine 39
Flame 119*
Flow 18*, 51*
Humidity 111*
Liquid Level 83*
Material Level 4
Positioning 49, 74, 85
Pressure 15, 25, 39, 64, 79, 89, 95, 111, 114*
Process 83*
Speed 52
Temperature 39, 42, 50, 62, 83, 92
Tension 47*
Vacuum 21, 64
Voltages 55, 88
CONVEYING
Belt 18, 45, 59*, 77, 83*
Bucket 115*
Chain 20, 27
Flight 18, 27, 89, 110*, 113
Overhead 6, 8, 24, 47, 59, 98, 104*
Pneumatic 77*
Roller 6, 7, 83*, 107*
Tube 15*
Wheel 6, 117*
Coolant Equipment 104
Cooling 3, 15, 31*, 47
Corrosion Proofing 13*, 32, 33*, 39, 61, 73*, 73, 96
Counting 17, 28*, 32, 44*, 90, 107*, 110*, 116*
Couplings, Shaft 1*, 3, 5, 20
Covers, Dock 21, 53
Cranes 6, 11*, 44, 47, 83*, 96, 104*
Crushing 86
CUTTING
Abrasive 106
Flame 6, 83, 110*
Machines 70, 93*
Tools 5, 6*, 34*, 40, 65, 78, 80, 83*
Cylinders, Power 13, 43, 76*, 81, 90, 93, 96, 97, 115
DEGREASING 54
Detectors, Flaw 9*, 76
Die Casting 14*, 16*
Die Castings 48, 73
Dispensing 69*, 111, 117
DOORS 14
Operators 13, 21*
Drafting 2*, 3, 39*, 88, 109*
DRILLING
Bushings 10, 43, 65, 84*
Chip Breakers 106
Heads 40, 68, 71, 77, 106
Jigs 14
Machines 84*, 98*
Tools 36*, 38*, 71, 72*, 113
DRIVES
Adjustable Speed 13
Components 1*, 3, 5, 7, 20, 21, 24*, 40, 44, 45, 48, 50, 51, 55*, 65*, 91, 115, 119
Speed Reducer 10*, 14, 20, 24, 25, 28, 52*, 81, 91, 94
Variable Speed 1*, 12*, 21, 26, 44, 65, 70
Drying 5, 53, 83, 100
DUCT
Electric 33, 80*
Ventilating 84*, 92, 110
Dust Collecting 14, 23, 24*, 32*, 51, 69, 71*, 74, 75, 84*, 107, 116
EARTH DRILLING 76*
Electrical Products 95
Electronic Products 59, 84*
Elevators 8, 29, 31*, 50, 87, 97*, 105*
Engineering 48*
Engines 47
Engraving 105
Extinguishing 2, 41, 103
FABRICS 84*
Fans 22, 59, 72, 84*, 102
Fastenings 3*, 9, 11*, 12, 18*, 18, 28, 35, 36*, 36, 41, 43*, 45, 52*, 56, 57, 63, 64, 74, 79, 81, 84*, 84, 93, 103, 109, 111, 113, 115
Feeding 13, 19*, 50, 72, 85, 102
Fence 19, 29
Fibre Parts 87, 109
Filing 84*
Filling 102, 108, 118*
FILTERING
Air 4, 32*, 69, 88, 97, 98
Liquid 7, 52, 61, 62*, 120
First Aid 95*
Flame Proofing 74
Floats 34
Floors 7, 25*, 36, 37, 59*, 64, 78*, 97, 99, 100, 109, 112, 117, 119, 120

Reader Service Form 16, 104
Useful Information 24
New Literature 82
Ideas For You 60
"I Wish I Had" 120

Fluxes 105
FORGINGS 86*
Forming 26
Freezers 78
Furnaces 14*, 35, 37, 55, 113*
Furniture 42, 63, 70*, 109, 116
Fuses 17, 63
GAGES
Dimensional 30, 35*, 53, 63, 66, 82, 86*, 98*, 112*
Liquid Level 79, 85*
Pressure 65*, 112
Stop 45*
Strain 89
Tension 19
Gaskets 20, 64
Gears 51
GENERATORS
Electric 8*, 72*, 95, 105*
Gas 20
Steam 16*, 52, 56, 61, 107
Glass 76
Gloves 15, 49, 59, 101
Goggles 14, 49, 56
Governors 52
Grabs 94, 101
Grating, Floor 7
GRINDING
Attachments 31
Dogs 86*
Machines 14*, 16, 48*, 67, 108*, 114*
Tools 25, 120
Wheels 68, 85, 118
Guards, Press 111*
Guides, Band Saw 22
HAMMERS 86*, 114
Handles 110
Handling 5, 6, 12, 34, 37, 61, 68*, 71, 79, 81*, 82, 91, 94, 101, 109*, 113
Handwheels 110
Hard Facing 40*
HEADS
Drill 40, 68, 71, 77, 106
Tapping 40, 106
Heat Exchanging 15, 86*
Heat Treating 5, 35, 113*
HEATING
Elements 5, 8*, 11, 16, 39*, 47, 66*, 108
Furnace 58*
High Frequency 5
Oven 51, 58, 60
Plates 26
Process 53*
Space 7, 51, 53, 64*, 94, 106*, 116*
Torch 37, 117*
Helmets 62*
HOISTS 16*, 27, 45, 51, 66, 67, 78, 96, 118
Drives 84
Hoppers 61
HOSE 86*, 110
Fittings 16, 86*
Metal 25, 40, 50, 74*
Humidifying 55

(Continued Over)

FOR ROUTING to others in your plant interested in product information

- ☐ *Plant Operating, Mr.* .....
- ☐ *Production, Mr.* .....
- ☐ *Engineering, Mr.* .....
- ☐ *Product Design, Mr.* .....
- ☐ *Purchasing, Mr.* .....
- ☐ .....

IDLERS, CONVEYOR 18
Indexing 110*
INDICATORS
Flow 44
Temperature 48
Ink 17, 24, 45*
Inserts, Thread 64
INSULATING, Electric 82
Thermal 49*
Isolating, Vibration....12, 42, 84

JACKS....2, 7, 13*, 33, 35, 39, 86, 91*, 100*
JOINTS, Pipe 20, 81
Shaft 50

KEYSEATING 58*, 99

LABELS....5, 23, 27, 35, 38, 120
Ladders....35*, 63, 73
Lamps....11, 95, 98, 99
Lapping 39
LATHES 16, 37
Attachments....16, 45*, 102*
Tools....23*, 57, 66, 71*, 113*
Layout 24, 49*, 110
Lighting....11, 23, 24*, 25*, 42*, 79*, 79, 95, 98, 99
Loading 5, 12
Locknuts....36*, 74, 93, 111
Locks 32
Lockwashers 63
LUBRICATING
Equipment....8, 9, 15*, 29*, 30, 40*, 60, 61, 75, 97
Materials....3, 4, 26, 56, 69*, 85*, 86*, 88*, 96

MACHINE TABLES 96
Machining 88*
Magnesium 25*
Magnets....9, 25*, 112, 120
Magnifying 106*
Management....18*, 25*, 26*, 88*
Mandrels, Expanding 67
Manometers 65*
MARKING, Machines 56*, 66*, 82, 88, 105, 114
Materials 5, 6*, 17, 23, 27, 35, 38, 45*, 62, 120
Tools 7, 40
Masking 11
Mats, Floor 16, 59*
Melting....9, 37, 55, 88*, 91*
METALS
Design Strengthened....10, 88*
Parts....48, 61, 70, 73, 82, 88*
Perforated 32
Prefinished 66
Shapes 90
Shot 26*
METERS
Charts 104
Electric..45, 47, 52, 95, 108, 120
Flow....88*, 104*, 108*
Liquid 56*, 110
Process 88*
Microfilm Service 48
MILLING
Attachments 31
Cutters..6*, 34*, 40, 73, 80, 90*
Machines....25, 69, 78, 105
Mixing....63*, 82, 90*, 111*
Molybdenum 4
Monorail 6, 24, 104*
MOTORS
Brushes 116
Control....12, 28*, 53, 90*, 105*
Electric 10, 11*, 22*, 25, 28, 29, 44, 52*, 74, 75, 87, 89*
Hydraulic 31, 107*
Pneumatic 60*

NAILS 28
Nameplates....56, 84, 90*, 93, 100
Nozzles 23, 41, 58
Nuts 35, 81, 93

OSCILLOSCOPES 49
Ovens....51, 53, 58, 60

PACKAGING
Containers..27*, 30, 33*, 77, 78
Equipment 10*, 11, 43, 103, 108, 111, 117, 118*
Materials....32, 39, 73
Packings 28*, 64
Pails 101
PAINTING
Conditioning 82
Equipment 19*, 22, 26, 34, 41*, 51, 74
Materials.28*, 43*, 57*, 74, 90*
Pallets 6, 81*
Panelboards 26
Paper 22*
Pencils 3
Photography 23*, 28*, 57, 73, 107*
Pins, Drive 18*, 84
PIPE
Coils 47
Fittings....20, 32, 81, 83, 86, 119
Fittings, Jacketed 46
Jacketed 46
Plastic 17*
Planing 74
PLASTICS
Materials....6*, 12*, 28*, 46, 75*, 77, 87, 90*, 93, 97*
Products....22, 64*, 96*, 118*
PLATES
Floor 36, 100, 109
Surface 110
Plating 25, 31, 78*
Pliers 90*, 99*
Plywood....72, 86, 90*, 108, 110
Polishing..16, 41, 50, 52*, 87*, 94
Power Units, Hydraulic....43
PRESSES
Attachments 72
Hydraulic....32*, 51*, 67*
Mechanical....81*, 87, 92*, 114*
Pneumatic 13
Tools 10, 15*, 46*, 58, 113*, 116
PRINTING, Equipment 9, 20*, 30, 31, 55, 66*, 70
Materials 9, 69
Processing 40*, 60*, 72*, 100, 107*, 118
Protecting....14, 15, 17, 21, 22*, 27, 49, 53, 56, 59, 62*, 73*, 80*, 85, 101, 111*
Pulleys 3, 44
Pulling....7, 27*, 33, 35, 70*
Pulverizing 79, 89, 100
PUMPS
Centrifugal 17, 41, 64*, 64, 92*, 100*, 104, 110
Condensate 18, 54
Hydraulic 21, 30*, 31, 32, 43, 62, 92*
Pneumatic 34, 52
Reciprocating 50
Rotary.1*, 18, 29, 68*, 103, 118
Vacuum....7*, 14, 30*, 95, 119*
Punching 116
Pyrometers 1*, 7, 9, 42, 48, 92*, 120

RACKS....80*, 109*, 111*, 116
RAILS 11
Clamps 3
Reaming 54*, 102
Record Keeping....22, 92*
RECORDERS, Process 45
Production 62
Rectifying....102*, 103*, 112*
Reducers, Speed 14, 20, 24, 81, 91, 94
Reels 109*
Refractories 81, 91
Refrigerating 31*, 68*, 78, 92*, 99*, 105*
REGISTER, MANUFACTURERS..50*
Relays....5*, 53, 58, 86, 102*
Resistors....11, 54, 76, 106*
Respirators 17, 27, 85
Rheostats 11, 54, 76
Rings, Retaining 45
RIVETING 12, 37
Rivets....12, 28, 43*, 57, 81
Rock Drilling 61*, 112*
Roofs 1*
Rubber Bonding 55*
Rubber Products....15, 69, 92, 101

SANDING 51, 99, 117
SAWING, Blades 46*
Machines 28, 34, 36, 52, 68, 84, 103
Machine Parts 22
Tools....66, 71, 97, 99*
Scaffolds 70, 72, 73, 80, 87, 111, 112*
Scales..8, 19, 36, 89*, 94, 97, 115
Screening....30, 38, 74*, 91*, 112
Screw Driving 46, 91
Screws 3*, 9, 28, 35, 79, 81, 103, 113
SEALING, Components....20, 22, 64, 66, 69*, 85, 92
Equipment 96*, 111, 117
Materials....13, 72, 81, 90, 115
Separating 3, 4, 30, 40, 80, 92*, 100, 112, 120
Sewing 43
Shafts, Flexible 85
Shearing 24, 27, 54, 59, 78, 92*, 104*
SHEAVES 3, 14, 48
Shelving 30, 45*
Shredding 57
Signaling..15, 46, 62, 79*, 90, 108
Signs....15, 46, 62, 105
SKIDS 82
Sleeves, Square Hole....82
Slings 34, 65
Slitting....46, 54, 71, 104*
Snow Plows....32*, 39, 93*
SOLDERING
Equipment 10, 75, 80
Materials....79, 89, 105
Solenoids 49
Solvents 27*, 55*, 118
Spraying....22, 23, 26, 58
Springs 33
Sprockets....3, 7, 40, 48, 115, 119
STAMPINGS 18, 30*, 36, 46, 57, 61*
Stands 70*
Stapling 94*, 98, 103
Starters, Fluorescent 23
Steels 6, 19, 34*
Storing....4, 30, 31, 45*, 71, 72, 74*, 80*, 109, 116
Strainers 4, 112
STRAPPING 65, 104
Stripping 70, 105
Stroboscopes 88
Stud Driving 34
Surplus 4, 38
Sweeping 19, 117*
Switches....15, 21, 33*, 41*, 42, 49, 100, 101*, 105, 108, 109*, 113, 115*

TABLES 42
Tachometers 44, 63
Tackers 98, 103
Tanks 40*, 61, 118
Water Supply 14
Tapes 6*, 23, 27, 44*, 49*, 62*, 81, 82
Tapping Heads....40, 106
Technical Publicity 58*
TESTING, Electric....21*, 101
Electronic 49
Flaw 9*, 76
Flexibility 119*
Fluorescence 79*
Gas 8*
Hardness 67*
Moisture 37*
pH 22, 87*, 106
Performance 20*, 100, 103*, 106*
Pressure....23*, 77*, 115*
Smoke Density 44*
Surface Roughness 30
Temperature 94*
Viscosity 101
Vacuum 101*
Thermistors 62
Thermometers....29*, 89, 112
Thermostats 83, 92
THREADING, Heads....40, 106
Machines 56, 83
Timing 5*, 11*, 62, 70, 75, 78*, 86, 113, 116*
Tires 109, 114
Tissue, Wiping 2*, 29
Torches 37, 114, 117*
TRACTORS....24, 39, 64
Attachments 12
Trailers 23, 103*
Tramrail 47
Transfers, Decal....93, 100
Transformers..14*, 31, 39, 57*, 75*
Traps....3*, 4, 19, 23, 86, 104*
Trays 68*
Trolleys 84
TRUCKS
Attachments....37*, 94*, 106*
Hand 16, 59, 79*, 82, 103*, 105, 111*
Hand Lift 68
Power 11, 24, 64
Power Lift 13, 17*, 20*, 25, 30, 32, 43, 50, 53*, 60, 68, 70*, 96*, 108*, 112, 113*
Power Units 95
Trailer 23
TUBES 35, 99
Finned 13
Fittings 67, 94*
Flexible....25, 40, 50, 92
Tumbling 41, 109*
Turntables 108*
Tying 103

UNIONS, PIPE....32, 83, 119

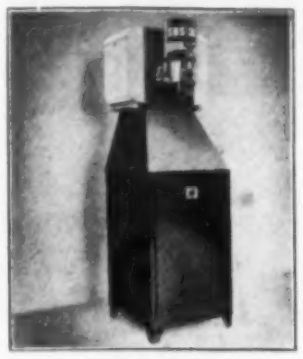
VALVES
Blowoff 6
Drain 35
Line 28, 34, 38*, 58, 59, 67, 83, 92
Operating 21, 119
Power Operated 42, 56, 102, 116*, 119
Regulating 38, 73*, 79, 89, 95, 103*, 111
Repair Parts 12
Vaporizing 20
Ventilating 8, 13*, 22, 33, 59, 72, 77, 92, 93, 102, 110, 120
Vibrating 46, 118
Viscosimeters 101
Vises....13, 18, 62, 113

WASHERS 18, 35, 81, 109
Washrooms 2*, 104
Water Proofing 59*
Water Treating....71, 94*, 96
Weighing 8, 19, 36, 89*, 89, 94, 97, 115
WELDING
Arc....30*, 67, 90, 95*, 117
Fasteners 94*
Flame 94*, 114
Materials 30*, 36*, 37
Positioners 33, 84
Resistance 54*, 91
Wheels....8, 12, 44, 69, 109
Winding 16, 35*, 54
Windows 45
Wire, Steel 36, 76
Wire Cloth 38
Parts 112
WIRE ROPE
Fittings 88, 98
Slings 34
Wood Working 34, 63*, 74, 97, 99*, 103
Wrenches....10, 12*, 28, 29, 46, 58
X-RAY 94*

If you write maker identify as **IEN - 1157**

CLEANING . . Waterless wash stand for installation in shop departments

Source: SUGAR BEET PRODUCTS CO.
301 Waller St., Saginaw, Mich.



About $50

A worker can clean his hands quickly and return to his job when this new Waterless Washstation is installed near his working position. The new unit, Type SBS-30, is designed to set up along production lines, near operations where grease, paint, or soil may require frequent removal, in warehouses and at points in plant that are not provided with adequate cleaning facilities. It also can be employed in outdoor areas where soap and water are not available.

Assembly consists of a rectangular steel housing finished in green enamel with a storage space beneath its turret top for supplies and with a canvas waste towel receiver in the base. In front, near the top, is a crank operated dispenser that takes inverted containers of the company's Waterless Skin Cleanser. On each side is space to apply any paper towel dispenser that may be in use in the user's plant. One turn of dispensing handle deposits correct amount of cleaner.

If you write maker identify as **IEN - 1158**

CLEANING . . Fabric tissues to clean and wrap optical lenses

Source: STARR CORP.
49 W. 19th St., 2nd Floor, New York 11, N. Y.

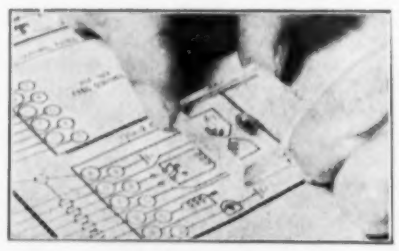
List price
$4.65 per ream

Lens Gauze is a new tissue sheet supplied in standard 7 by 11-in. size to remove grease, dirt and finger marks from lenses, prisms and other optical or scientific apparatus. It also is suited to wrap and protect the equipment. The material is a lintless fabric, not a paper. It will not scratch the lens surface. Packaging is in reams of 500 sheets.

If you write maker identify as **IEN - 1159**

DRAFTING . . Symbol stamps to minimize circuit drafting work

Source: JOHN GRIFFIN CO.
2155-59 James Ave., St. Paul 5, Minn.



Symbol shows through

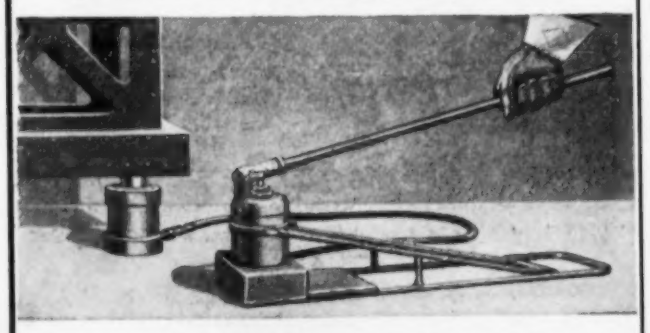
New kit assembles 27 generally used symbols for electrical and electronic circuits, each on a transparent plastic block. The user can "plant" a selected symbol in position on an engineering drawing to impress the symbol, after contacting the block on a special ink pad provided for this purpose.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1160**

It Can Lift 30 Tons 2 Inches!

Closed it is 4½ Inches High, Weighs 38 Lbs.



The "Lo-Hite" Remote Controlled Hydraulic Jack with detached, independent pump

This little jack was designed for heavy lifting in places where a jack handle cannot be operated. The independent pumping mechanism is connected to the jack by an 8-foot flexible rubber hose permitting operation of the jack from any convenient plane—vertical, horizontal, inverted or inclined. Two heat-treated steel tops, one pointed, the other radius, included with the kit are interchangeable and provide versatility in jacking operations.

Safe, sturdy, built for trouble-free service, the Duff-Norton "Lo-Hite" hydraulic jack is winning new friends every day. Write to the world's oldest and largest manufacturer of lifting jacks for bulletin AD-3-M, The Duff-Norton Manufacturing Co., P. O. Box 1889, Pittsburgh 30, Pa. Canadian Plant—Toronto 6, Ontario.

DUFF-NORTON JACKS
"Giving Industry A Lift Since 1883"

If you write maker identify as **IEN - 1161**

The finest products of the watchmaker's art do not reach the high level of precision attained by New Departure ball bearings.

Manufacturing standards which insist on certain tolerances being held to millionths of an inch give these bearings the ability to provide the virtually friction-free support demanded by moving parts.

In all applications, keep your eye on the BALL to be sure of your BEARINGS!

NOTHING ROLLS LIKE A BALL

NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT
Also Makers of the Famous New Departure Coaster Brake

If you write maker identify as **IEN - 1162**

FOR FIRES

- **IN TEXTILES**
- **IN FLAMMABLE LIQUIDS**
- **IN ELECTRICAL EQUIPMENT**

• New Kidde 5 pound Dry Chemical Fire Extinguisher can be *recharged with air* at any air pump. It has more fire-killing action than any unit of its size.

Kidde

Walter Kidde & Company, Inc.
236 Main St., Belleville 9, N. J.

If you write maker identify as **IEN - 1163**

Hot off the press

HANDY & HARMAN
EASY-FLO NO. 3 TRIMETAL

This little folder tells all about this new alloy that completely satisfies all strength and other requirements of mounting cemented carbides for heavy duty cutting tools. Write for a copy of the Trimetal folder today.

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.
Distributors in Principal Cities. In Canada: Handy & Harman of Canada Ltd., Toronto

If you write maker identify as IEN - 1164

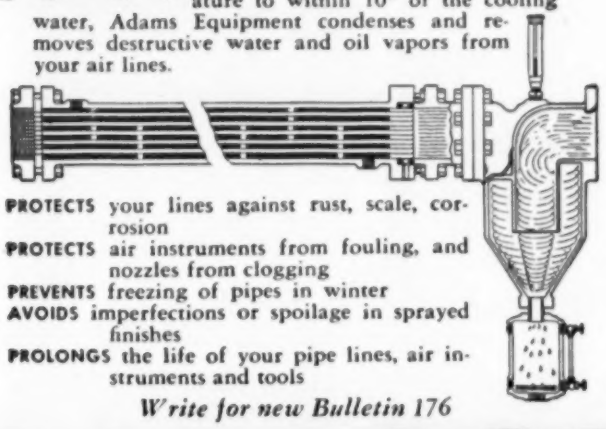
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with ADAMS Aftercooler and Cyclone Separator

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

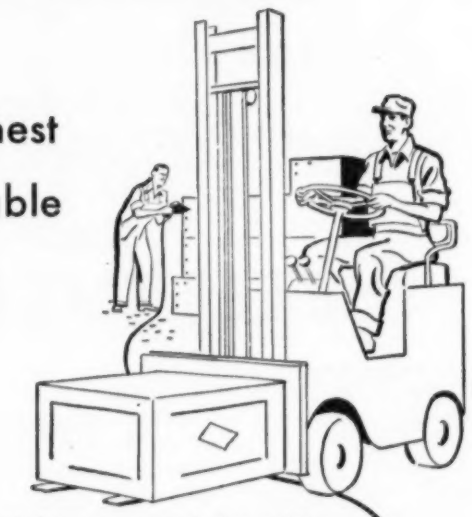
Write for new Bulletin 176

R.P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

If you write maker identify as IEN - 1165

SECURITYFLEX

the toughest portable cord



Securityflex's heavy neoprene jacket resists water, oil, crushing and abrasion. As a result —Securityflex* lasts longer, increases the use of fine tools and saves you money by requiring fewer replacements.

Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

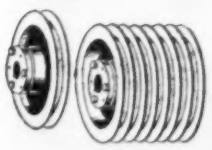
52426

the right cable for the job ANACONDA® WIRE AND CABLE

*Trademark

If you write maker identify as IEN - 1166

To BROWNING-ize means to ECONOM-ize



SINGLE AND MULTIPLE GROOVE SHEAVES

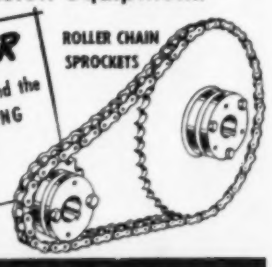
Save time and money by standardizing on BROWNING'S simple interchangeable BUSHING system in all your power transmission equipment.

RIGID AND FLEXIBLE COUPLINGS

PAPER PULLEYS

SPLIT TAPER BUSHINGS

WRITE FOR Catalog #GC101 and the name of BROWNING DISTRIBUTOR near you.



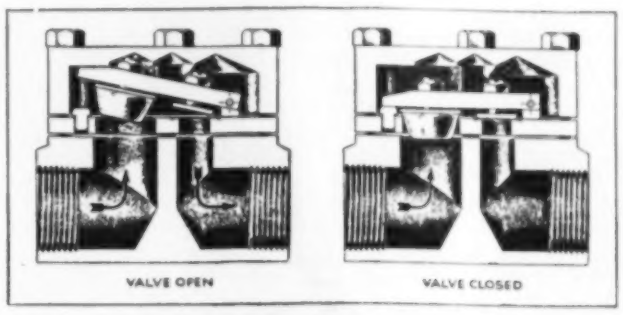
ROLLER CHAIN SPROCKETS

BROWNING MANUFACTURING COMPANY MAYSVILLE KENTUCKY

If you write maker identify as IEN - 1167

TRAP . . Impulse design for steam operates on series-orifice principle

Source: YARNALL-WARING CO. 122 Mermaid Lane, Philadelphia 18, Pa.



Illustrated data in Bulletin T-1745

Series 50 is new design in the company's line of impulse steam traps. It has been developed for use where condensate must be handled in large quantities. It is available in 1½ and 2-in. pipe line sizes at approximate list prices of $108 and $144.

Capacity ranges from 3,000 to 24,700 lb. of condensate per hour in a pressure range between 1 and 300 lb. for the 1½ in. size. It rates 4,670 to 37,400 lb. per hour under the same pressure range for the 2 in. unit. Overall length is about 5½ and 6½ in. between threaded faces in the stainless steel body. The parts are made of stainless steel, except the body and bonnet gaskets, which are soft copper, and the hexagon head cap screws. They are heat treated alloy steel.

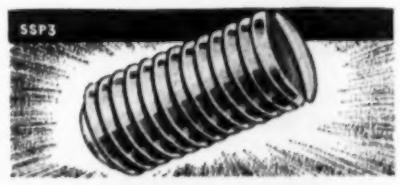
Upward pressure of air and accumulated condensate, when steam is turned on, lifts the left hand large inlet valve. This action, in turn, lifts the right hand small outlet valve and permits full discharge through the outlet side of the trap. Control flow, combining with main flow, moves steadily through the trap until the condensate has been discharged to a point where its temperature approaches that of steam at the given pressure.

At this point some of the condensate flashes to increase pressure in the control chamber above the two valves until sufficient downward force is built up to close them both and shut off the main condensate flow. The small control flow continues. When the condensate has cooled a little, the flashing action stops, pressure in the control chamber is reduced and the inlet valve and outlet valve are free to open wide again for full discharge.

If you write maker identify as IEN - 1168

FASTENING . . Cup point set screw, slotted or milled head, alloy steel

Source: SET SCREW & MFG. CO. 5 Main St., Bartlett, Ill.



Detailed in catalog

Nu-Cup is a new design in the company's line of specialty set screws in which a Zip Grip locking thread set screw was previously described IEN-858-50. The new unit is available in the same range of sizes, between No. 0 and ⅝ in., with slotted or milled head. It is characterized by the comparatively large diameter of its cup point which makes a deep impression for secure anchorage to a shaft.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1169

SAFETY EQUIPMENT FOR ALL INDUSTRIES

M&M RAIL CLAMPS

Used for car stops, on loading platforms, temporary sidings, cars on grades and traveling cranes.

THIS The Dangerous Way OR THIS THE SAFE WAY

Used and recommended by leading Steel Companies, Manufacturing Plants, Mines, Grain Elevators, Cement Plants and Quarries.

WRITE FOR BULLETIN NO. 4

IPCO Safety Equipment for all Industries

INDUSTRIAL PRODUCTS COMPANY

2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

If you write maker identify as IEN - 1170

LUBRICATION ECONOMY

"This Lubricant Extended Bearing Life 50%"

Republic Aviation Corp. further states, "*It was also found that, during test, LUBRIPLATE increased efficiency of machines twenty per cent by reducing friction loss. Republic has been using LUBRIPLATE Lubricants successfully for the past eight years.*"

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 5, N.J.—Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

If you write maker identify as IEN - 1171

• One-hand clutch operation avoids touching lead, smearing fingers or drawing.
• Exclusive collet holds lead in bulldog grip, prevents it slipping back into holder.
• Clean, balanced, efficient for every type of drawing, sketching, rendering, coloring.

CASTELL Imported Lead

18 degrees, 7B to 9H—gives more prints — cleaner and sharper prints — than any other drawing lead. Lasts 25% to 33⅓% longer. Black or colored. Your Drawing and Art Supply Dealer has them.

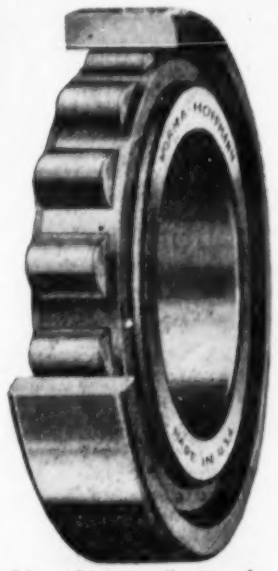
CASTELL

the drawing pencil with the Master Degrees

If you write maker identify as IEN - 1172

Norma-Hoffmann PRECISION MADE Roller Bearings

Give you MAXIMUM Capacity in MINIMUM Space



And equally important—they are interchangeable with single-row ball bearings

If your bearings must operate under such severe conditions as high speeds, heavy loads, temporary overloads, shock or vibration, *then Norma-Hoffmann Roller Bearings are the ones to use.* Here's why —

● Solid cylindrical rollers between cylindrical races provide maximum load contact area, increased steady load capacity, and a larger shock-absorbing capacity than any other type of single-row bearing.
● A safety factor margin ample for temporary overloads up to 50% beyond normal rating, as under peak loads, in unusually severe duty, or under shock conditions.
● Large contact area with the most efficient load distribution provides greater wear-resisting surfaces, assures true rolling between rollers and raceways, results in minimum friction between roller and cage.
● A lower friction coefficient under heavy load than any other type of bearing permits.
● Speedability equal to that of any ball bearing, size for size, up to 35,000 R. P. M.

Write for catalog or engineering assistance.

NORMA-HOFFMANN BEARINGS
BALL • ROLLER • THRUST

NORMA-HOFFMANN BEARINGS CORP. • STAMFORD, CONN.
FIELD OFFICES: Atlanta, Birmingham, Charlotte, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Jacksonville, Kansas City, Los Angeles, San Francisco, Seattle

If you write maker identify as IEN - 1173

Effective even where other lubricants have failed

Moly-sulfide
A LITTLE DOES A LOT

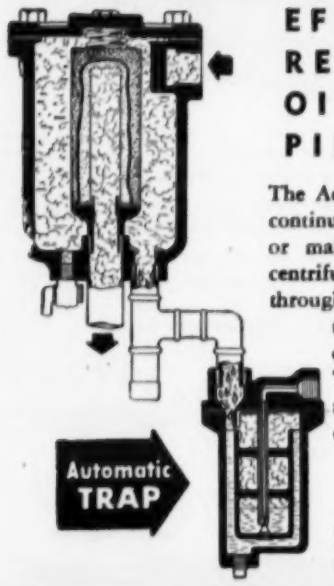
Moly-sulfide, a solid film lubricant, stands out most where the lubricating conditions are the most difficult. If you have to contend with extreme conditions of pressure, temperature, fretting, or velocity, you should try Moly-sulfide. First write for a copy of this free 40-page booklet which shows where the above conditions have already been overcome in the shop and in the field.

Climax Molybdenum Company
500 Fifth Avenue · New York City 36 · N·Y

MS 7-A

If you write maker identify as IEN - 1174

Poro-Stone Filtration FOR COMPRESSED AIR



EFFICIENTLY REMOVES OIL, WATER, PIPE SCALE

The Adams *Poro-Stone Filter* gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation.

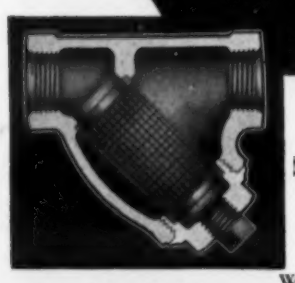
Write for complete data Bulletin 176

R. P. ADAMS CO., Inc.
219 E. Park Drive, Buffalo 17, N. Y.

ADAMS *Poro-Stone* **AIR FILTER**

If you write maker identify as IEN - 1175

don't let dirt damage your piping!



CRANE SEDIMENT SEPARATORS COST SO LITTLE

Iron Body and Cast Steel
•
Working Pressures
Up to 600 pounds steam. Iron patterns in sizes up to 12-in. Steel patterns to 1½-in. Screwed or Flanged Ends.

Why take chances with valuable and sensitive flow control equipment? Put Crane Sediment Separators in your pipe lines and be sure dirt, grit and scale can't do damage.

Simple in design; rugged in construction. Have extra large screening area assuring free fluid flow with minimum pressure loss. Effectively trap all foreign matter. Periodic blowing out is only maintenance required. Get full details from your Crane Catalog or call your Crane Representative.

CRANE CO., 836 S. Michigan Avenue, Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

CRANE *Everything for Every Piping System*

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

Industrial Equipment News

PUBLISHED BY THOMAS PUBLISHING COMPANY

W. E. Irish — Editor and Vice-President
F. Morse Smith — Vice-President in Charge
J. W. MOSS — Managing Editor
E. M. RYAN — Assistant
A. J. GRANICK — Circulation Manager
R. B. COHEN — Production Manager

EDITORIAL ASSISTANTS
M. L. Welsh; A. J. Willis

CIRCULATION AND READER SERVICE ASSISTANTS
E. De Cassar; V. Felicioni

BUSINESS DEPARTMENT ASSISTANTS
H. Benjamin; M. Casey; R. Irish; B. Sullivan

These are our local offices:

		Telephone
Atlanta (6)	3 Villa Dr. N. E.	VErnon 2969
Boston (8)	50 Beacon Street	LAfayette 3-4688
Chicago (4)	20 West Jackson Blvd.	HArrison 7-3730
Cleveland (14)	3145 Superior Ave.	CHerry 1-6582
Detroit (30)	115 Handy Rd. (G. P.)	TUxedo 1-1161
Indianapolis (19)	973 N. Sheridan Ave.	BLackstone 0293
Los Angeles (5)	2700 W. 3rd St.	DUnkirk 2-4889
New York (1)	461 Eighth Avenue	LOngacre 3-1546
Philadelphia	P. O. Box 96, Upper Darby	GRanite 2-6500
Pittsburgh (22)	2101-2 Farmers Bank Bldg.	EXpress 1-0244
Toronto (1)	137 Wellington St., W.	EMpire 4-1421

THIS ISSUE 68,000 COPIES

Printed by Charles Francis Press, New York

Industrial Equipment News acts solely in a news reporting capacity for data supplied to it on new industrial developments.

Copyright 1953 by
THOMAS PUBLISHING COMPANY
461 Eighth Ave., New York 1, N. Y.

VOL. 21 FEBRUARY, 1953 No. 2

Your Suggestions

We quote briefly from just a few of your many replies to our "year end" letter. We want you to know that we appreciate your cooperation. We shall do our best to put your suggestions to work.

"IEN lists the widest variety of products so I prefer it. It enables me to get an idea of what is done in other fields." Electrical Engineer—Mining.

"The items are well presented. IEN's attitude is friendly. Our inquiries are answered promptly." Superintendent—Paper Making.

"I think IEN is the best product news publication on the market." Engineer—Steel Mill Equipment.

"Makers of small parts such as lock washers, roll pins, special fastenings would perform a real service by making up small kits of their products to sell for $10 or less. We who work in pre-production design dislike having to order a thousand or more pieces when we are not certain they are just what we need." Design Engineer—Aircraft.

"It would be helpful if more manufacturers gave cost information. We are concerned with economic justification for new equipment and must know installation costs. This information need not be exact. Approximate figures would give us all we need initially." Methods Engineer—Munitions.

"When a company sends a salesman or representative it should be certain to furnish him with specific information on the subject for which we inquired. Some companies do not do this with resulting confusion and misunderstanding." Physicist—Research.

"We prefer to use the reader service form in making our inquiries but I wish the manufacturers would answer first with descriptive matter containing adequate detail and then follow with a representative when we ask for one. The present system of sending representatives first results in wasting my time and their own when I need to check literature data before discussing possible installation with a salesman." Technical Engineer—Chemicals.

"We mark, with red crayon on the front page, the name and page number of any items we think we may need. We then make direct inquiry and hold the marked issue on file until we receive the information we have asked for." Plant Engineer—Insulating Materials.

"We keep a catalog file that is used by about 300 mechanical, electrical and aeronautical engineers. It would be a full time job for two people to keep it current without IEN. I do it with IEN in my spare time." Specifications Engineer—Aircraft.

"IEN is devoured by all three of us who are responsible, in our organization, for improvement in methods and design of equipment. Our requests for additional information have been many. All are made direct to the manufacturers." President—Process Equipment.

"Your index move to the front page has been probably your most outstanding change in the past year. It certainly speeds up scanning and quick reference." Superintendent—Refrigerating Equipment.

"We would like to see more information in the advertisements telling how high is 'high pressure' and how low is 'low cost'." V. P.—Hydraulic Equipment.

W. E. Irish

If you write maker identify as IEN - 1176

HAS EVERYTHING!

HANDIEST CABINET EVER MADE FOR STORING SMALL ITEMS

"HAZ-BIN, JR."

SUCCESSOR TO "JIFFY" CABINETS
Contents visible! Lifetime-guaranteed, crystal-clear plastic drawers. Strong all-steel cabinet has individual drawer guides. Baked-on silver-gray hammer finish. Sent complete with index cards, removable lengthwise and crosswise drawer dividers, rubber feet.

32-DRAWERS (96 compartments)
15⅜" high, 6" deep, 12½" wide — **$12.95**

Lifetime Guaranteed CLEAR PLASTIC DRAWERS
Drawer size for all models—2-3/4" wide, 1-7/16" deep, 5-7/8" long. Movable dividers separate each drawer into 3 compartments.

Made in 9 Sizes:

J-128	128 drawer	(384 compartments)	$55.95
J-96	96 drawer	(288 compartments)	42.95
J-64	64 drawer	(192 compartments)	24.95
J-48	48 drawer	(144 compartments)	20.95
J-32	32 drawer	(96 compartments)	12.95
J-24	24 drawer	(72 compartments)	10.95
J-16	16 drawer	(48 compartments)	7.75
J-12	12 drawer	(36 compartments)	5.95
J-8	8 drawer	(24 compartments)	4.25

10 Day FREE Trial! Money Back Guaranteed!
SEND FOR FREE DESCRIPTIVE FOLDER

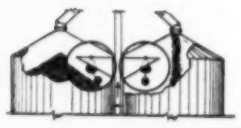
AKRO-MILS, INC.
Box 989-N
AKRON 9, OHIO

If you write maker identify as IEN - 1177

CONTROLS bin levels *Automatically*

S-A TELLEVEL

Prevents wasteful overflow or empty bins . . . does away with choking in enclosed bins. Mount one Tellevel near top, another near bottom. Rising or falling material moves light float ball, stops or starts conveyor, elevator or pump. For bulk materials or liquids—normal duty, explosion proof or heavy-duty.



Rising level of material tilts float-ball and stops conveyor.

Write for TELLEVEL Bulletin 11-O

STEPHEN S-A ADAMSON MFG. CO.

Tellevel-Bin Level — SealMaster Ball Bearings
Car Loaders • Car Pullers • Winches • Saco Speed Reducers
231 RIDGEWAY AVENUE, AURORA, ILL.

If you write maker identify as IEN - 1178

SAVE UP TO 85%

WAR SURPLUS SAVINGS

STAND MAGNIFIER
Handy stand magnifier with universal adjustments. Overall height: 6". Has powerful, clear magnifying lens. 1.49

NEW — INSIDE - OUTSIDE VERNIER CALIPERS
German made by one of Europe's leading specialists in precision tools. Measures inside-outside & depth in .001" to 6" in 1000ths and 1/10mm to 150mm in 10ths. 9.75
MICROMETERS – 0" to 1" in 1,000ths. Has lock-nut & ratchet ...ONLY – . . . 9.75

MAGNETIC BASE-INDICATOR HOLDER . . .
A time saver for precision checking. Magnetic base fits curved or flat surface. Has 45-50 lb. pull. Stainless steel 6½" rod mounted in ball socket permits universal settings . . 3.50
Note: We have complete line of instruments, depth gauges, inspection mirrors, etc. WRITE TODAY

BENDIX HYDRAULIC PUMP & MOTOR
Has 3-1/2 GPM capacity at 600 PSI. Motor is 1½ HP, 24V, D.C. Will operate on either 12 or 32V, DC current. Has built-in relief valve adj. to 1500 PSI. This unit ideal for hyd. lifts, portable loaders, etc. 19.50

HYDRAULIC HAND PUMP
Operating pressure 2000 PSI. Cap., 1.5 cu. in per complete cycle . . . 12.75

GEAR HEAD MOTORS
Heavy duty, G.E. Gear Head motor. 2 HP, 24V. DC, 125 amp., reversible motor drives a reduction gear unit giving 36 to 1 ratio at take-off. Also will operate on 6 or 12 volts.
MOTOR ALONE 4.95 — GEAR BOX 7.95
36 to 1 G.E. (306 shaft RPM)
28 to 1 Eclipse (130 shaft RPM)
40 to 1 Eclipse (110 shaft RPM)
10.95 EA.

HYDRAULIC ACCUMULATORS
A-2B FLOATING PISTON TYPE – 4" x 18" Built to stand 2,000 PSI 12.75
A-5 VICKERS – 10" dia. Ball type. Built to stand 2000 P.S.I. 24.75

ELECTRIC ACTUATORS
Hundreds of uses for any mechanical device needing controlled 2 way action. Opens, closes, raises or lowers doors – windows – gates – valves. CTU-2 – Foote Linear Actuator – 24 volt, DC, 8500 RPM, 1/6 HP – series wound motor. 4½" stroke in 13½ sec. Compression and tension loads up to 750 lbs. Adjustable micro switch for limits of travel. Overall lngth., retracted 11". 7.95
We also carry many more sizes and types of Actuators. Write today for information.

HYDRAULIC CYLINDERS
Gives 20,000 lb. thrust (push or pull) using 1500 PSI line pressure as obtained from our hydraulic pumps. Will produce up to 40,000 lb. thrust with 3000 PSI. Can also be used on low pressure air systems. 4" bore; 18" stroke; 30½" length. Ideal for roll form – shop machinery. 29.75

No. 3 HYDRAULIC CYLINDER
Double action. Bore is 1" – Shaft ½". Has stroke of 2½" to 4". Stroke can be adjusted with internal sleeve stops. Overall length is 8½". Will take 1500 lbs. continuous duty. 3000 lbs. intermittent. Will lift or push up to 1100 lbs. 5.75
We stock over 50,000 Hydraulic Cylinders, Valves, Pumps, Accumulators, Hand Pumps, Motors, Hose, etc. All at Money Saving Prices.

230 Pg. CATALOG
Amazing Values! 1000's of items for Mfgr., Mechanic, Sportsman, etc. Save on Machine Tools, Hydraulics, Pumps, Valves, Hand & Power Tools, Instruments, etc. Send for your copy today!

PALLEY SUPPLY CO.
2263 E. VERNON AVE.
Dept. IN-3
LOS ANGELES 58, CALIF.

Order from this ad. Pay by M.O. or check. P.O's. accepted from D&B firms. ½ deposit with C.O.D's.
All Prices F.O.B. Los Angeles

If you write maker identify as IEN - 1179

. . . your best
INSURANCE
against
alignment troubles

LOVEJOY
FLEXIBLE COUPLINGS

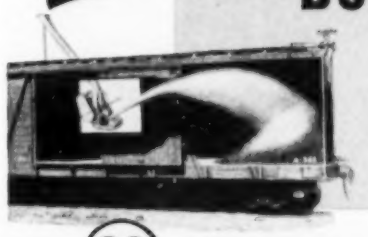
—offer the best obtainable insurance against alignment troubles—dampen and absorb starting torque, vibration and shock of intermittent loads — protect motor and driven machine — lengthen bearing life. LOVEJOY Flexible Couplings are ruggedly constructed, durable, and provide excellent resiliency. Bodies are carefully machined. Cushions available in materials suited to the particular load conditions . . . can be changed without shutdown. No lubrication needed. Write today for Catalog and Handy Selector Charts.

WRITE TODAY FOR CATALOG AND HANDY SELECTOR CHARTS

LOVEJOY FLEXIBLE COUPLING CO.
5014 W. LAKE STREET CHICAGO 44, ILLINOIS
Also Mfrs. of Lovejoy Universal Joints and Variable Speed Transmissions

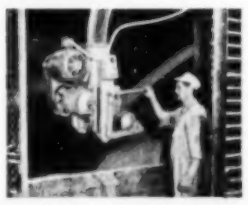
If you write maker identify as IEN - 1180

ONE Man LOADS and TRIMS Box Cars
40 to 60 T. P. H.



S-A SWIVELOADER

Saves time, money and labor. Powerful centrifugal thrower loads dry, granular material up to 2" size into far corners of box cars. Operator stays safely outside car. May also be used for storage bins or piles.

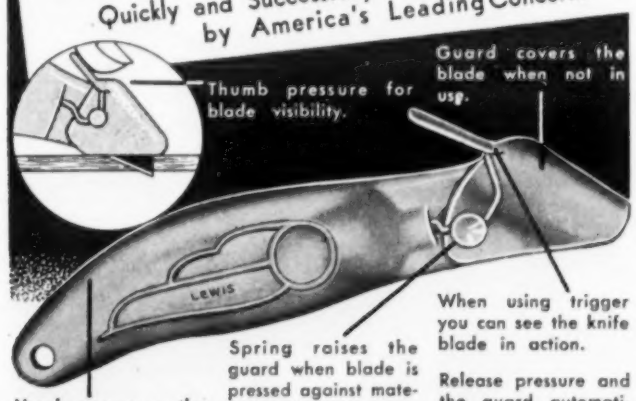


Write for Bulletin 1046

STEPHEN S-ADAMSON MFG. CO.
Tellevel-Bin Level Controls — SealMaster Ball Bearings
Car Loaders • Car Pullers • Winches • Saco Speed Reducers
231 RIDGEWAY AVENUE, AURORA, ILL.

If you write maker identify as IEN - 1181

NEW! LEWIS AUTOMATIC TRIGGER ACTION SAFETY KNIFE
Quickly and Successfully Adopted for Use by America's Leading Concerns



No other cutting tool like it. Eliminates the hazards of exposed cutting blades. You must operate it to appreciate its swift and sharp cutting . . . always automatically ready for use. Trigger action gives full blade visibility with safety.

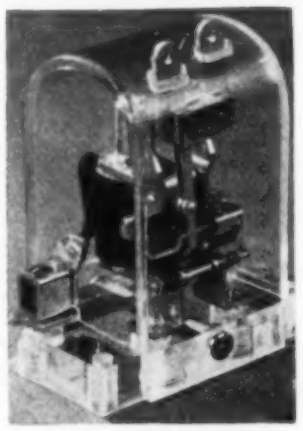
Retail Price $1.50

FLASH BOX OPENER CO., Inc.
52 W. Houston St. • New York 12, N. Y.

If you write maker identify as IEN - 1182

TIMING . . Hydraulic relay delays operation of circuit contacts

Source: HEINEMANN ELECTRIC CO.
313 Plum St., Trenton 2, N. J.



Ask for Bulletin 5101

Type C is a new design of the company's Silic-O-Netic relay, previously described IEN-11502-51. It provides high speed operation under dangerous conditions and time delay for starting in-rush in protection of electrical equipment. The new unit is available with a time delay curve to match the characteristics of the protected equipment. High speed response takes place at eight times rating.

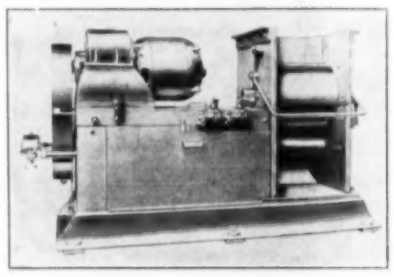
The contacts rate 10 amp. on 110-volt ac. The coil is insulated for 440-volt service with rating from 1 to 100 amperes. The assembly is completed with a tamper proof phenolic housing. Weight is 6 ounces.

Operation is controlled by a mechanism consisting of a sealed brass tube extending through and beyond the solenoid coil to enclose a movable iron core and a filling of silicone liquid. Magnetic force is not sufficient to attract the armature on starting in-rush or small overloads. It does draw the armature into the field at a rate controlled by the viscosity of the silicone. The relay will respond when the armature core reaches the pole piece. On heavy overloads the core is not a factor and relay operation is instantaneous.

If you write maker identify as IEN - 1183

BUNDLING . . Winding machine to make bundles of stringy scrap

Source: McLANAHAN & STONE CORP.
100 Wall St., Hollidaysburg, Pa.



Floating roll rides bundle

Model 18 for scrap bundles to 18 in. in diameter and length and Model 24 for bundles to 24 in. are new designs of the company's scrap winding machine, previously described IEN-3571-44. Both machines form the scrap into cylinders around a revolving spindle and are suitable for bundling aluminum, brass, lead or steel in wire or strip form. Drive is by a 10 or 15-hp. motor with chain and sprocket connection to the winding spindle.

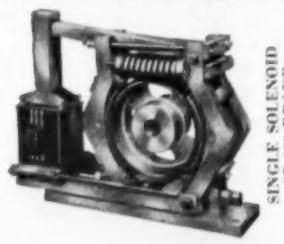
The drive includes a keyway connection to the drive sprocket so it can be removed to discharge the bundled scrap. Actual discharge action is by air pressure acting on a pusher ram that rolls the scrap bundle out of the machine hopper after the spindle has been withdrawn, also by application of air pressure.

Rotation is at 45 rpm. Operation is protected by a switch lever extending across the front of the hopper and by a start-stop-reverse switch that can be adjusted so the operator must hold a push button down to keep the machine in operation.

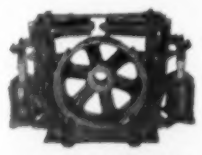
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1184

TROMBETTA SOLENOID CORP.
331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.



SINGLE SOLENOID SB-373 BRAKE 10" DIA. 5" FACE 475 FT.-LBS. CONTINUOUS DUTY



DOUBLE SOLENOID SB-388 BRAKE 24" DIA. 10" FACE 2400 FT.-LBS. CONTINUOUS DUTY

SB-300 LINE OF BRAKES
Sizes 2½" dia. x 1½" face to 72" dia. x 14" face, continuous rating range from 3 ft.-lbs. to 24,000 ft.-lbs.

8 SPECIAL FEATURES

(1) Operated by long stroke, high power large capacity solenoids. (2) Only 50% of solenoid stroke is used to release the brake. The extra 50% is reserve to take care of lining wear. (3) They can be used for stopping as well as for holding loaded motors. (4) In double solenoid type, one solenoid operates the brake and the other is a spare assuring uninterrupted operation. (5) They are available for all voltages and frequencies alternating current. (6) Also for all voltages direct current series or shunt connections. (7) In shunt operation no series resistances, no discharging resistances are necessary. (8) They are available with oil immersed and explosion proof solenoids.

NINE LINES OF SOLENOIDS, RECIPROMOTORS AND SEMOTORS

See McGraw Hill's Prefiled Electrical Catalogs. Write for Additional Information.

If you write maker identify as IEN - 1185

CHROMALOX gives you the *LOW COST* answer for

VARIABLE HEAT
NON-BREAKABLE INFRARED
SAFE OPERATION

CHROMALOX ALL-METAL *Electric* RADIANT HEATERS

The new and improved CHROMALOX heating principle gives ALL infrared heat advantages: high heat intensity, "color blind" infrared radiation, heat that's infinitely variable! You get more satisfactory results at reduced costs in baking, drying, curing, preheating and similar uses with CHROMALOX Radiant Heaters.

Write for FULL DATA
Tell us what you want to do with infrared heat and we'll send you data sheets covering your needs.
IB-23

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

See Chromalox Electric Heating Units Advertisement, Page 11

If you write maker identify as IEN - 1186

WRITE OFF COSTLY ERRORS

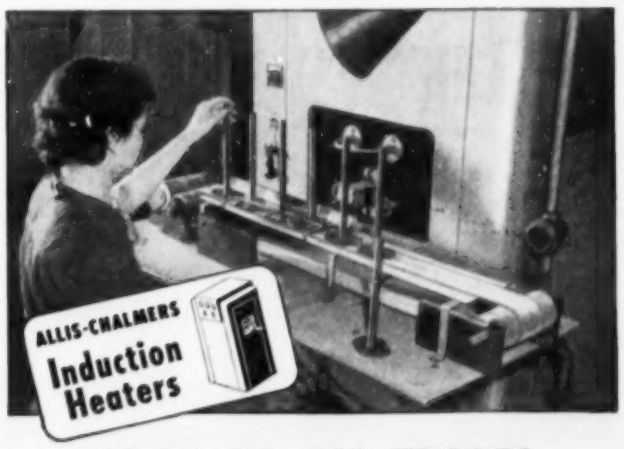
USE BRADY "WRITE-ON-LABELS"

A remarkable new development in write-on labels, combining printed forms and write-on space. Eliminate errors, simplify quality control, speed production through the use of these Brady self-sticking, Write-on Labels, made to your requirements. They're mounted on handy dispenser cards which serve as writing boards; easily written on with pencil, pen, rubber stamp or even typewriter, and then applied to any surface. Hundreds of money-saving uses, including inspection, identifying circuits and instruments otherwise hard-to-mark.

Made of self-adhesive, sturdy cloth backing, pre-cut to exact size, shape, color and printing desired. Send for samples and complete information on stock and special labels.

MANUFACTURERS OF SELF-STICKING PRODUCTS
PIPE MARKERS · SAFETY SIGNS · PRINTED ROLL TAPE · MARKS & STENCILS
W.H. BRADY COMPANY
739 W. GLENDALE AVE., MILWAUKEE, WIS.

If you write maker identify as IEN - 1187



JACK-OF-ALL-TRADES
on hardening, annealing, brazing jobs

JOB SHOWN is one of many jobs in this plant handled by the one machine. Operator is brazing housings for shock absorbers. They pass through coil on asbestos conveyor belt at speed of 2 feet per minute. Production: 6 pieces a minute. A simple change of work coils is all that's needed and this same Allis-Chalmers Induction Heater is then used for fast, low cost hardening, annealing, brazing, or heating.

It's easy to find out what Allis-Chalmers Induction Heaters can do for costs in your plant. Simply call your nearby Allis-Chalmers district office and outline your heating problems. Or write, Allis-Chalmers, Milwaukee 1, Wisconsin.

A-3611

ALLIS-CHALMERS

If you write maker identify as IEN - 1188

Warehouse installation of wheel and roller straight sections and curve feeding from three directions through FLEX-A-SWITCH onto portable belt "POWER HELPER" for delivery to higher level loading floor. Metzgar conveyors are ideal for production line and warehouse handling.

• SALES OFFICES IN PRINCIPAL CITIES

METZGAR CO.

MFGRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES & REEL DOLLIES

METZGAR CONVEYORS

417 Douglas, N. W.

GRAND RAPIDS 4, MICH.

If you write maker identify as IEN - 1189

AMERICAN MONORAIL EQUIPS RIGID FRAME BUILDINGS WITH FLEXIBLE OVERHEAD SERVICE

Don't let crane requirements stymie your consideration of rigid frame buildings. Packaged buildings not only provide definite savings in construction costs and erection time but can be equipped with crane service over the entire area. American MonoRail cranes up to 5-ton capacity are available for entire span or half span operation. If you are planning plant expansion and considering rigid frame type construction, be sure to include American MonoRail cranes. Our engineers will gladly consult with you and show you cost and space saving advantages, in addition to original installation savings. Write us today.

THE AMERICAN MONORAIL COMPANY

13111 Athens Avenue • Cleveland 7, Ohio

If you write maker identify as IEN - 1190

NEW SLIDE CHART

on *Carpenter* Stainless Steels

gives you information to help you select the proper Stainless for

Drawing	Machining
Forging	Riveting
Heading	Roll Forming, etc.

This new Carpenter chart also contains valuable data on the physical constants of many Stainless grades. For your copy, just return the coupon.

THE CARPENTER STEEL COMPANY
151 W. Bern St., Reading, Pa.

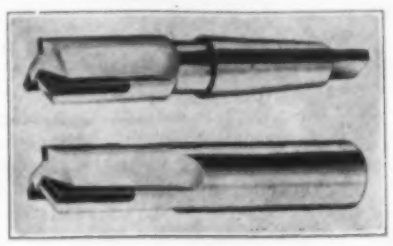
Please send me a copy of the new Carpenter Stainless Slide Chart.

NAME _____ TITLE _____
(Please Print)
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

If you write maker identify as IEN - 1191

MILLING . . Carbide tipped cutter, 3/8 to 3/4 inch, two shank designs

Source: SUPER TOOL CO.
21652 Hoover Road, Detroit 13, Mich.



Ask for Bulletin 129

End milling operations, to include penetrating as well as routing, can be performed by this new carbide tipped milling cutter. It is designed particularly for nonferrous metals and non-metallic materials. Three flutes are standard. Tip length ranges from 1/2 to 11/16 in. in the overall size range. Overall length is 2 1/2 to 3 3/8 in. in the straight shank design. It is about 3 to 4 7/8 in. in the taper shank unit. List price is about $14.50 to $21.

If you write maker identify as IEN - 1192

PLASTIC . . Fiber glass mat for reinforcement in plastic molding

Source: FERRO CORP.
202 Woodycrest Ave., Nashville 11, Tenn.

Sample available upon request

Uniformat is a new type of chopped strand fiber glass reinforcing mat, nearly white in color and uniform in weight and pattern. It is made by cutting 2-in. lengths from continuous strands of glass fiber and depositing them in a random pattern in the form of a continuous length of bonded mat. Standard width is 50 inches. Edges are trimmed to assure even weight and usefulness of the material to the full width.

Two types include Ferro GP chopped strand mat for matched metal die molding and for use in periodic or continuous dip impregnation. The second type, Ferro HSB, is intended particularly for atmospheric curing work produced by bag molding, tailoring or hand lay up. Low pressure and bake-cure parts also can be reinforced with this mat type.

If you write maker identify as IEN - 1193

MARKING . . Printed plastic tape is self-adhering to a clean surface

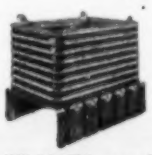
Source: G. I. TAPE CO.
1018-22 N. Lake St., Warsaw, Ind.

Sample on request

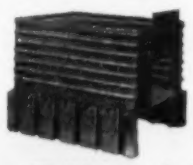
The company announces availability of a new self-adhesive cellulose tape with specified printing for application on any clean oil-free surface. The tape is supplied in rolls ranging from 3/8 to 4 in. in width and in a variety of colors of both tape and ink. A dispenser can be supplied to hold the tape and assist in tearing off desired lengths.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1194



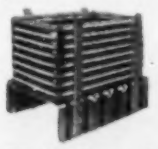
Type PB-120T box and platform with tiering lugs.



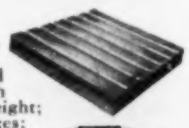
Type PB-650 box and platform units with sliding end door.

Now...Specify *Republic* STEEL BOXES & SKIDS

Same "Truscon-type" steel boxes and skids you've always known and used. Now, they have a new name: "REPUBLIC". Same ability to carry the load and keep things moving. Same ability to produce savings for you in all phases of materials movement. Backed by the same experience, engineering ability, and efficient production experience. Fully described in free illustrated catalog.



Type PB-120L box and platform units with full length lifting lugs.



Double-Face Steel Pallets —rigidity and strength with minimum weight; no sharp edges; three styles.

PRESSED STEEL DIVISION
REPUBLIC STEEL CORPORATION
6200 TRUSCON AVE. • CLEVELAND 27, OHIO

If you write maker identify as IEN - 1195

rapidly duplicated with

di-acro HYDRA-POWER BENDER

An example of large radius forming.

At last — a PRODUCTION BENDER that "BENDS THEM ALL" —tubing — angle — channel—extrusions—moulding — strip stock — bus bars—and of course, all types of solid materials. U-Bolts and Eye-Bolts are just two examples of the shapes that can be rapidly produced in one operation with this hydraulic power bender.

The DI-ACRO HYDRA-POWER BENDER can be easily set up in your own plant for a great variety of forming operations, or it can be delivered completely tooled for speedy production of a specialized part. Investigate this universal machine before you buy any "single purpose" bender.

Send for

"DIE-LESS DUPLICATING" CATALOG

giving full information on all DI-ACRO Benders, Brakes, Shears, Rod Parters, Notchers, Punches—also our offer of free DI-ACRO Engineering Service.

DI-ACRO is pronounced "DIE-ACK-RO"

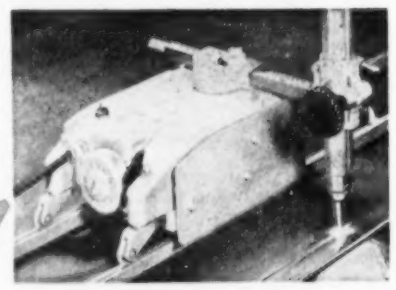
O'NEIL-IRWIN MFG. CO.

318 8th Avenue, Lake City, Minnesota

If you write maker identify as IEN - 1196

SAVE TIME AND MONEY with this

OXWELD Trade-Mark **MACHINE CARRIAGE**



Here is a new lightweight machine carriage—the OXWELD CM-45—that will mechanize literally dozens of oxy-acetylene jobs in large or small metalworking shops, and do them better than the most skilled hands.

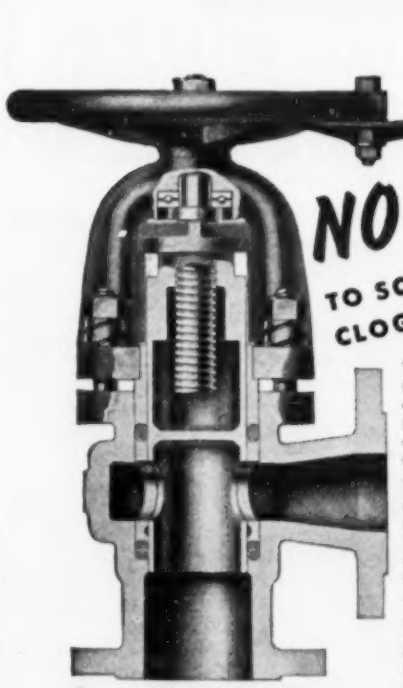
You save money when you let the CM-45 do your cutting, beveling, flame-treating, or special welding jobs. Its efficient operation saves oxygen and acetylene as well as time, and rejects are reduced to a minimum.

For further information, call your nearest LINDE representative today. Ask for a free copy of Form 7839. No obligation.

LINDE AIR PRODUCTS COMPANY
A Division of Union Carbide and Carbon Corporation
30 E. 42nd St., New York 17, N. Y. Offices in Other Principal Cities
In Canada: Dominion Oxygen Company, Limited, Toronto

"Oxweld" is a trade-mark of Union Carbide and Carbon Corporation.

If you write maker identify as IEN - 1197



NO SEAT!

TO SCORE...WEAR... CLOG...AND LEAK

The Yarway Seatless Blow-Off Valves eliminate the commonest source of trouble and expense with ordinary blow-off valve operations.

The famous seatless principle first introduced nearly 40 years ago, has been constantly improved and adapted to meet modern service requirements.

There is a Yarway Blow-Off Valve for every pressure.

SEND FOR FREE BLOW-OFF VALVE BOOKLET. PLEASE STATE YOUR BOILER PRESSURES.

Cross section of Type "B" Seatless Angle Valve, Flanged.

YARNALL-WARING COMPANY
122 Mermaid Ave., Phila.18, Pa.

YARWAY BLOW-OFF VALVES

If you write maker identify as IEN - 1198

- CUTAWAY DRAWINGS
- LIST OF LIQUIDS THAT CAN BE FILTERED
- GENERAL SPECIFICATIONS
- PERFORMANCE DATA
- LIST OF MEDIA USED
- INSTALLATION STORIES
- COMPLETE DATA SHEET

SEND FOR THIS 12 PAGE BULLETIN D-1L

JUST OFF THE PRESS

DOLLINGER STAYNEW FILTERS

DOLLINGER CORPORATION

3 Centre Pk., Rochester 3, N. Y.
ALL TYPES OF FILTERS FOR EVERY INDUSTRIAL NEED

If you write maker identify as IEN - 1199

SIMPLIFY tough PULLING jobs

Pull Rod or Screw Inserted through UNIQUE "CENTER HOLE"*
Ram is drawn in a straight, torque-free pull through Ram. Ram is its own back up! Less rigging time — more effective power!

10 to 100 ton capacities.

*"Center-Hole" in Rams of 30-ton and greater capacities.

Simplex Re-Mo-Trol

HYDRAULIC PULLERS
PUMPS AND REMOTE CONTROLLED RAMS

If it can be pulled, Re-Mo-Trol can pull it—easier and faster! Pulls liners, sleeves, shafts, gears, etc. SAFER remote control. Also lifts or presses. Can save its cost on a single tough job!

WRITE FOR BULLETIN: HYDRAULIC 51

Simplex Screw Hydraulic Jacks

TEMPLETON, KENLY & CO.
1012 South Central Avenue • Chicago 44, Illinois

If you write maker identify as IEN - 1200

Mecco SAFETY ROUND SHANK TYPE HOLDER

With the knurled shank designed to permit a firm, positive grip, the Model RS Type Holder is made of Mecco Safety Steel to eliminate mushrooming and spalling. The type is interchangeable, and the holder can be made for either one or two lines of type. Includes patented snap slide for quick changing of type.

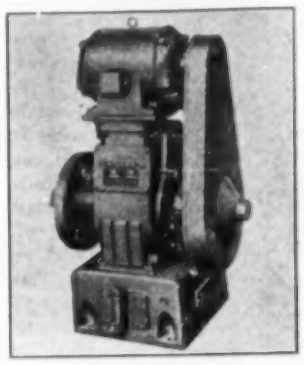
Write for Catalog 100

M. E. CUNNINGHAM CO.
SAFETY STEEL STAMPS
1039 Chateau Street • Pittsburgh 33, Pa.

If you write maker identify as IEN - 1201

PUMP . . Rotary vacuum unit reduces pressure to 5 microns absolute

Source: F. J. STOKES MACHINE CO.
5956 Tabor Road, Philadelphia 20, Pa.



Microvac Model G

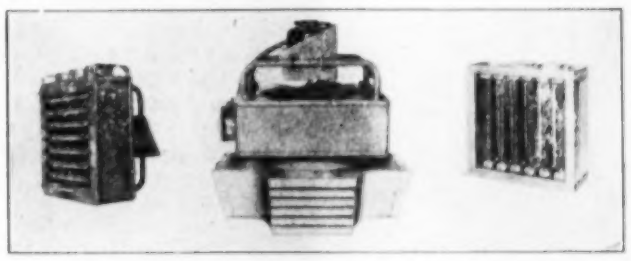
Model G designates new design of the company's Model-F vacuum pump, previously described IEN-8719-51. Basically and in outward appearance the new pump is the same design as the previous one and rates 500 cfm. displacement at 390 rpm. with its 25-hp. motor drive. It employs the same cylindrical type piston equipped with a sliding vane that moves in a rocking head. The piston surrounds an eccentric mounted on the drive shaft. Each revolution of the eccentric results in complete discharge of air.

A shaft seal replaces the previous stuffing box. Lubrication is automatic with guaranteed freedom from leakage. New valve stops prevent the beryllium copper springs from reaching coil-to-coil compression. The stops also permit use of the pump in a range of applications that includes rapid cycling evacuation of large volume enclosures. A side entrance intake baffles entering solids. Additional protection is provided by a new screen filter. The pump can be opened quickly for cleaning. An oil filter in the line to the shaft seal is standard equipment. A new solenoid valve in the oil supply line prevents flooding in the event of power failure.

If you write maker identify as IEN - 1202

HEATING . . Electric space units and element sections, to 204,000 btu.

Source: L. J. WING MFG. CO.
158-62 Vreeland Mills Road, Linden, N. J.



Available with specified controls

Three types of unit heater, employing electricity as the heat source, have been added to the company's line of space heating equipment. The units are available for ceiling suspension with rotating or stationary discharge outlets and in a horizontal discharge design with adjustable vanes. Any of the three types can be employed in hot weather to circulate the air. Ratings range from 13,600 to 204,000 btu. per hour. Air handling capacity ranges from 235 to 3,600 cfm.

In addition to the unit heaters the company is prepared to supply heating element sections, particularly for duct application or for process heating. These sections range from 25,500 to 204,000 btu. per hr. in heating capacity. The elements are Hynes design on flexibly mounted insulators that test to 6,000 volts.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1203

If you write maker identify as IEN - 1204

The process operator who uses a Speedomax Model G electronic indicator saves a lot of time in checking temperatures.

A flick of the finger connects any one of as many as 126 thermocouples to the Indicator . . . the instrument's calibrated drum whirls to the reading . . . the drum stops dead still.

Write us at 4905 Stenton Ave., Philadelphia 44, Pa., for Catalog ND46(1).

LEEDS & NORTHRUP CO.
Instruments • Automatic Controls • Furnaces
Jrl. Ad ND46-420(1e)

If you write maker identify as IEN - 1205

SAVE 2 WAYS on Chain Drives and Conveyors

This Book Shows You How

With Baldwin-Rex Double Pitch Roller Chain, you save both cost and weight without sacrificing the high quality of standard roller chain. Where speeds are slow to medium, loads are moderate and centers are long, Double-Pitch is often the economical choice.

For all the details on how this precision chain can save you important money and weight, just use the coupon to send for our free Double-Pitch Bulletin.

BALDWIN-REX ROLLER CHAINS

Chain Belt Company 53-408
358 Plainfield Street, Springfield 2, Mass.

Please send me Bulletin 51-2.

Name.....
Company.....*Dept*.....
Address.....
City.....*State*.....

If you write maker identify as IEN - 1206

EVERY STEP A SAFE STEP WITH BLAW-KNOX GRATING

Everyone walks safely, confidently on Blaw-Knox Electroforged Steel Grating . . . the one-piece panels stay rigid and strong—without shimmy or shake—because there are no parts to work loose. Twisted cross bars provide sure footing under the most adverse conditions. For complete information, write for Bulletin 2365.

BLAW-KNOX GRATING
Industry's first choice for

- SAFETY • STRENGTH • LONG LIFE
- LOW UPKEEP • SELF-CLEANING

Grating Department
BLAW-KNOX EQUIPMENT DIVISION
of Blaw-Knox Co.
2050 Farmers Bank Bldg.
Pittsburgh 22, Pa.

BLAW-KNOX ELECTROFORGED® STEEL GRATING

If you write maker identify as IEN - 1207

Advanced designs for today's increased speeds and greater hauling distances. A complete selection of sizes, in all types of wheels to meet your exact requirements. Capacity rated to help you choose the right wheel for the job. All wheels equipped with Hyatt roller bearings having hardened outer races to insure longer years of service. When you need wheels—see THOMAS, *first!*

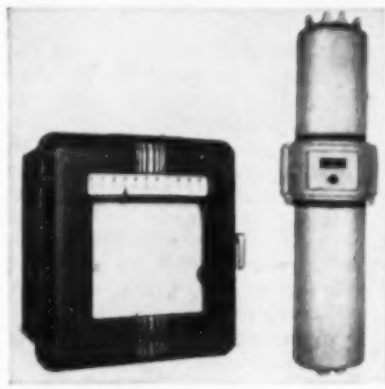
If you write maker identify as IEN - 1208

If you write maker identify as IEN - 1209

If you write maker identify as IEN - 1210

TESTING . . Infrared analyzer measures one gas in a stream mixture

Source: LEEDS & NORTHRUP CO.
4934 Stenton Ave., Philadelphia 44, Pa.



Also for control

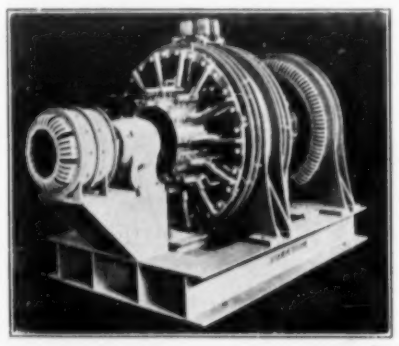
The company announces development of a new gas analyzer for application with a Speedomax recorder and, if desired, an automatic gas standardizer for continuous measurement of one gas compound in a stream mixture. The analyzer can be employed to measure carbon monoxide in the regenerator of fluid catalytic cracking units, to measure sulphur dioxide in paper manufacture, methane in ammonia, isobutane in alkylation units. Measuring speed is in 10 sec. intervals to provide quick adjustment in critical processes.

The equipment is able to measure carbon dioxide in nitrogen over a range from 0 to 0.68 per cent carbon dioxide. One design of analyzer cell columns, shown to the right in the illustration, is employed for all measurements. Various lengths of sample and filter cells can be used for required sensitivity.

If you write maker identify as IEN - 1211

GENERATOR . . Motor driven assembly, specified voltage, 300 to 20,000 amp.

Source: CHANDEYSSON ELECTRIC CO.
4082-86 Bingham Ave., St. Louis 16, Mo.



Typical unit

New design, aimed at accessibility for inspection and cleaning combined with provision for unrestricted air circulation, features the company's line of motor driven electric generators. The motor is a direct connected low speed heavy duty synchronous unit with either 80 per cent leading or unity power factor. Each motor is designed to apply on the job for which the generator is specified. Extra windings on the rotor poles for high starting torque permit across-the-line starting.

Identify as IEN - 1212

Plastic sheet, the transparent variety such as Plexiglas, can be heated quickly and inexpensively for forming by a home made oven using Wiegand radiant electric panels in the flat roof. The panels look down inside a three sided enclosure made of corrugated asbestos sheets on a metal frame. The work sheets are wheeled in and out of the open side on a truck so they lie about 12 in. below the elements.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1213

If you write maker identify as IEN - 1214

Precision Quality Control . . .

Why does the motor in your car run so smooth? There are several reasons of course but one is perfectly balanced connecting rods, eight of them if you drive an eight. Just how this is done is illustrated with double mounted, electrically operated Shadograph Scales. One unit weighs the heavy end of the rod, the other the light end. Rods falling into the same classification are used in the same assembly. This is precision quality control. Probably no tools or instruments have had more effect on quality in industry than scales and few scales have reached more applications than EXACT WEIGHT Scales. More than 3500 different applications of these famous industrial units have already been made. Submit your problem. We may solve it from past experience or another new experience. WRITE!

EXACT WEIGHT SCALES

BETTER QUALITY CONTROL
BETTER COST CONTROL

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

If you write maker identify as IEN - 1215

If you write maker identify as IEN - 1216

If you write maker identify as IEN - 1217

SAVES UP TO 50% ON FASTENINGS IN LIGHT GAUGE SHEET METAL

The Original P-K Sheet Metal Screw

SKIPS Tapping — Forms Own Threads

AVOIDS Bolting Riveting Soldering

SAVES Time and Trouble in Millions of Assemblies.

P-K TYPE A Hardened SELF-TAPPING SCREW

One of many types of Parker-Kalon Self-tapping Screws for faster, stronger metal and plastic assemblies. For details, write Parker-Kalon, 200 Varick St., New York 14, N. Y.

Call in a P-K Assembly Engineer
See why industry's fastening-wise leaders say —
IF IT'S P-K® — IT'S O.K. — THE *ORIGINAL*
PARKER-KALON® SELF-TAPPING SCREWS
AVAILABLE EVERYWHERE THROUGH ACCREDITED DISTRIBUTORS

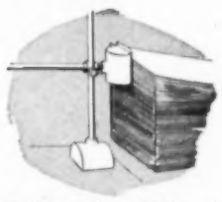
If you write maker identify as IEN - 1218

FREE

PERMANENT MAGNET IDEA LITERATURE KIT

Shows you how Carboloy magnets can speed up your shop work . . . save you time, money

In holding steel plates to conveyors, for example . . .



separating tin sheets to prevent feeding doubles . . .

holding work steady for drilling and grinding . . .

or for recovering tools from dip and coolant tanks.

NOW, see how Carboloy permanent magnets can eliminate clamps, jigs, vises, fixtures and other costly units . . . speed up jobs, retrieve tools, perform all sorts of unique and useful services around your plant.

Send for free kit containing handy magnet ideas you can put to work at once — complete with diagrams, full details. Send today, and from time to time, we'll send you other free application suggestions that will really pay off for you.

PERMANENT MAGNET BENEFITS

Carboloy permanent magnets need no electric power, have no operating parts. Give off stable, powerful energy that lasts permanently . . . are not affected by heat, moisture, vibration . . . cost nothing to operate. Write today for the full story and for your *free* magnet idea kit. No obligation, of course.

"You-Try-It" Magnet Packages Available

Shop Package No. 1 — Contains 48 Carboloy permanent magnets: 8 styles — 3 pairs each. Magnetic pull up to 2 lbs. per magnet. Price $10.00. Get yours now!

Shop Package No. 2 — Contains 18 magnets: 4 styles — 2 pairs each, and 1 style — 1 pair. Magnetic pull from 3 lbs. to 12 lbs. per magnet. Price $15.00. Order today!

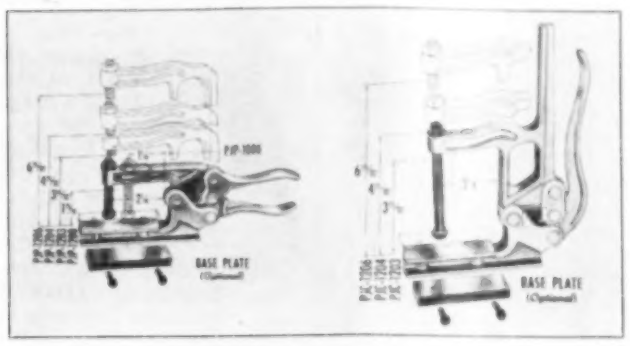
"Carboloy" is the registered trademark for the products of Carboloy Department of General Electric Company

CARBOLOY PERMANENT MAGNETS
DEPARTMENT OF GENERAL ELECTRIC COMPANY
11177 E. 8 Mile Ave., Detroit 32, Michigan
Plants at Detroit, Michigan; Edmore, Michigan; and Schenectady, New York

If you write maker identify as IEN - 1220

CLAMP . . Toggle designs for application on jigs and fixtures

Source: LAPEER MFG. CO.
3054-58 Davison Road, Lapeer, Mich.



Eight Knu-Vise models

Eight new plier type toggle clamps have been added to the company's line, five of them with horizontal handles and three with vertical handles. The former, Series PJP, provides a clamping range between 1 11/16 and 6 15/32 inches. Corresponding throat capacities are 1¼ to 2¼ inches. The vertical handle, Series PCJ, has a clamping range between 3 15/32 and 6 15/32 in. with throat capacity at 2¼ inches.

A base plate is available in soft metal with two bolts for attaching or in hard metal permanently installed to measure 1 in. in thickness including the parallel jaw. The spindles are adjustable for height and are fitted with nuts to lock them in desired working position.

If you write maker identify as IEN - 1221

TESTING . . Liquid dye and developer reveals surface flaws in metal parts

Source: MAGNAFLUX CORP.
5914 Northwest Highway, Chicago 31, Ill.

Applies in local areas

Spotcheck trade names a new test kit containing a supply of cleaner, liquid dye or penetrant, and a liquid developer. The cleaner is sprayed on a surface suspected of containing a flaw and then is wiped off. The penetrant is then sprayed or brushed on. It is a bright red liquid and is drawn into any surface crack. This is followed by a second application of the cleaner and by wiping clean. Finally the developer is brushed on to produce a smooth coating that draws out the penetrant and clearly outlines any existing defect.

The kit is known as Type SK-1 and lists at about $36. It contains eight 12-oz. cans to include four of the cleaner, two of the penetrant and two of the developer. All are packaged in a carrying case with wiping cloth, a wire brush, an application brush and an illustrated instruction book.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1222

If you write maker identify as IEN - 1223

PRODUCE MORE MELTED COMPOUND FOR LESS OVERALL COST

IF you choose compound melters that are efficiently operated because of inherently correct basic design . . . melters that can be engineered for your job requirements . . .

THEN you'll be assured of producing more melted compound per hour or day at less overall cost.

Exploded view of typical round 1 gal. Sta-Warm tank showing various engineering features.

Sta-Warm melters, in a wide variety of standard sizes and shapes, with built-in accessories to meet special conditions, and with correct basic design will give you the operating efficiency and low cost you need.

Inquire today, outlining your problem. No obligation. *Ask for Sta-Warm recommendations.*

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN - 1224

Let Farval do your lubricating and step up machine production

THROUGH efficient, dependable lubrication of machines and industrial equipment of all kinds, Farval saves 4 ways: It saves oiling labor, it saves lubricant, it reduces bearing expense, and most important of all, it eliminates down time, thereby increasing machine production.

The Farval System is a positive mechanical method of delivering oil or grease under pressure to a group of bearings from one central station, in exact quantities, as often as desired. It consists of a central pumping unit, automatic or manually operated, two main supply lines and a measuring valve for each bearing.

"Case Studies 1952" and Bulletin 25 give you the facts and figures. Write to The Farval Corporation, 3258 East 80th Street, Cleveland 4, Ohio.

Write for these *FREE* bulletins

FARVAL
CENTRALIZED SYSTEMS OF LUBRICATION

If you write maker identify as IEN - 1225

NEED COPIES?

MODERN MIMEOGRAPHING—New equipment and supplies for the fast production of copies on a wide variety of paper and card stocks. A. B. Dick mimeograph products are for use with all makes of suitable stencil duplicating products.

MODERN OFFSET—A. B. Dick lithograph direct image plates and masters provide for (1) longer runs with sharp definition—(2) easier corrections—(3) more successful filing—(4) marked superiority in resistance to fingerprints.

MODERN SPIRIT DUPLICATING—A. B. Dick CLEEN-SEAL master sets and spirit carbons guard against stains and smudges. Available in a variety of sizes for long, medium and short runs. Five brilliant colors—purple, red, green, blue and black.

Write Dept. IEN 253 for full information—or call the A. B. Dick Distributor listed in the classified section of the phone book.

A·B·DICK
THE FIRST NAME IN DUPLICATING
A. B. Dick Company • 5700 Touhy Avenue • Chicago 31, Illinois

If you write maker identify as IEN - 1226

Fastest Torquer in the World!!

...the Amazing New PROTO Torque-*Limiting* Wrench with Automatic Release!

Vastly superior to old-fashioned torque-indicating types. Super-Fast . . . Accurate . . . Easy To Use . . . Versatile . . . Rugged . . . Low-Priced . . . Does Better Work

See and buy this great new torquer at your nearest PROTO dealer. Send for free folder (enclose 10¢ for 68-page catalog of *complete* PROTO line) to
PLOMB TOOL COMPANY
2271X Santa Fe Avenue
Los Angeles 54, Calif.

5381

SIX MODELS

Remember! PROTO means PROfessional TOols

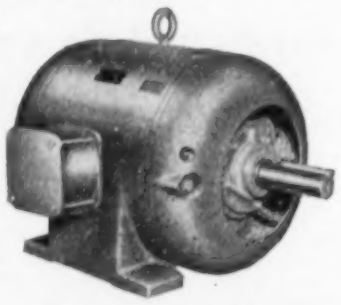
PROTO TOOLS LOS ANGELES

Eastern Factory—Jamestown, N.Y.
Canadian Factory—London, Ont.

If you write maker identify as IEN - 1227

Where corrosion is a problem . . .

Where explosion might occur . . .



Wagner

Type JP Cast Iron Frame Motors

Wagner type JP cast iron frame motors are built for any application where corrosive or explosive condition might prevail. These rugged motors are totally-enclosed in corrosion-resistant cast-iron . . . are fan-cooled by an externally-mounted non-sparking bronze blower that forces air through ventilating passages in the frame. These motors feature completely protected laminations . . . special varnish treated windings . . . a running shaft seal . . . and an explosion-proof conduit box with machined fits. They are available in ratings from 2 to 250 hp, with normal or high torque characteristics. Ask for Bulletin MU-132 for complete information on these protected motors or consult the nearest of our 32 branch offices.

Wagner Electric Corporation EST. 1891

6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

M53-9A

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

If you write maker identify as IEN - 1228

RIGID-tex METALS

RIGIDIZED METALS CORPORATION
6642 OHIO STREET BUFFALO 3, N. Y.

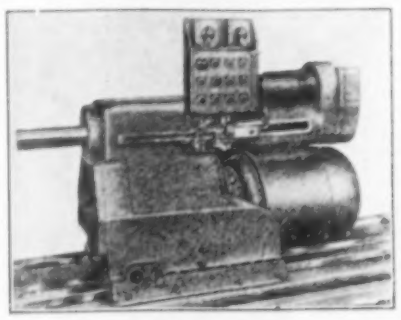
50 Warehouses and Sales Representatives in All Principal Cities Throughout the U. S. and Canada

U. S. & Foreign Patents

If you write maker identify as IEN - 1229

BORING . . Motor driven head operates 3 in. spindle, 10 in. stroke

Source: W. K. MILLHOLLAND MACHINERY CO.
6400-404 Westfield Blvd., Indianapolis 20, Ind.



Specified swing

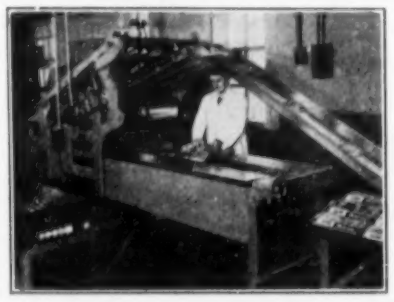
Spindle rotation for this new No. 3B boring head is in a range from 33 to 500 rpm. by means of pick-off gears between the driving motor and the spindle sleeve. The sleeve rides at the forward end, in two precision Timken bearings. The rear is mounted in a third bearing that is permitted to float. The spindle reciprocates in hardened steel bushings mounted in this sleeve for rapid approach, feed and retraction movements.

Feed movements are powered by a motor driven hydraulic pump and fluid motor, the latter driving a gear reduction to the lead screw that feeds a nut mounted in ball bearings on the spindle end. Valves permit cycle adjustment with movements controlled by adjustable dogs and limit switches in connection with a rotary stop mounted on the lead screw. The stop can be set on 0.001-in. increments.

If you write maker identify as IEN - 1230

PACKAGING . . Wrapping machine seals bacon in cellophane on cards

Source: PACKAGE MACHINERY CO.
East Longmeadow, Springfield, Mass.



Minimizes air space

One operator feeds this new Model F wrapping machine with sliced bacon on a plain card or the special folded card normally used for this purpose. The same operator removes the wrapped bacon which is delivered from the machine to move down a chute in elevated position. The machine is adjustable, by turning two hand wheels, for packages from 5 to 8 in. in width, 9½ to 11 in. in length, ¼ to 1 in. in height. Speed is adjustable from 20 to 40 packages per minute.

Wrapping operation draws cellophane tightly over the bacon and completes a bottom seal so the underfold is tightly connected to the bottom of the package.

Identify as IEN - 1231

Built into the Type HAT worm and gear speed reducer, in the Philadelphia Gear Works line, is a new release device to protect against dangerous overload. It employs a preloaded spring to back the worm. A Micro switch is actuated by the spring when an overload is imposed on the drive. The switch connects into a control circuit to open the motor circuit. The company can fit it into any of its work and gear reducers ranging to 260 hp. with 6,300 to 1 maximum reduction.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1232

SEND FOR YOUR **FREE COPY**

NEW ACME BUSHING CATALOG

Contains America's **LARGEST BUSHING Selection**

Features **2** Standards
A.S.A. Standard *Plus* Acme Standard

Makes Bushing Procurement Easy . . . Fast! Send For Your FREE Copy Now!

Simplifies, speeds bushing selection. Packed with valuable data. Saves you time and trouble. Also includes liners, leader pins, dowel pins, locating jigs, etc.

Serving Industry For 28 Years

ACME INDUSTRIAL COMPANY
215 N. Laflin St., Chicago 7, Illinois

MANUFACTURERS OF DRILL JIG AND FIXTURE BUSHINGS

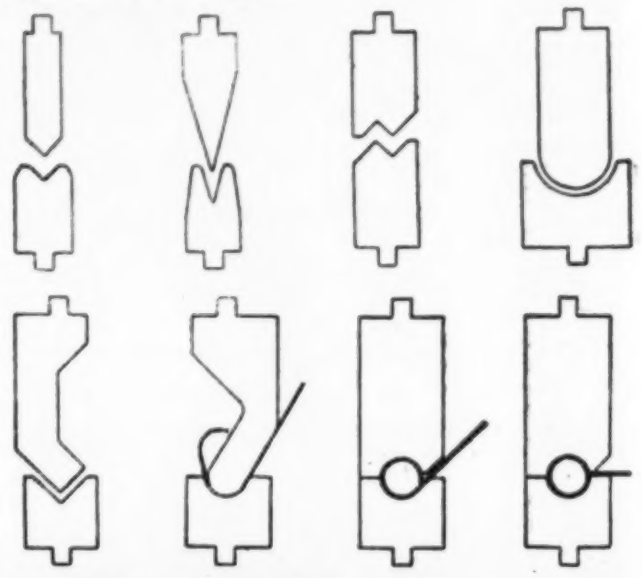
If you write maker identify as IEN - 1233

PRESS BRAKE FORMING DIES

PROMPT DELIVERY

Any Metal—any gage—to fit any make of machine

Here are a few examples:



RAFTER MACHINE COMPANY, INC.
SINCE 1917

249 Stephens Street **Belleville 9, N. J.**

COLD ROLL FORMING MACHINES AND GANG SLITTERS

If you write maker identify as IEN - 1234

Production Soldering BETTER JOBS FASTER more Economically

Save Labor, Solder . . . Increase Production

This new MOGUL unit is built to deposit silver, lead, and tin base solders in a liquid or semi-liquid form . . . faster, cleaner . . . to any constant moving part. This new automatic soldering gun replaces the soldering bath, hand soldering, and in many cases, expensive fixtures. Quickly adapted to various size parts. Adjustable to speed of work . . . gives pin-point location for cleaner seams.

BETTER WORK APPEARANCE

Deposits solder or brazing wire to the exact spot for cleaner seams. This new MOGUL soldering gun is now in wide use, saving time and money, increasing production, and turning out a better-looking product.

Write today for new MOGUL SOLDERING GUN bulletin

METALLIZING COMPANY OF AMERICA
Dept. IEN • 3520 West Carroll Avenue
Chicago 24, Illinois
Telephone: SAcramento 2-3710

If you write maker identify as IEN - 1236

Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin IE-2.

L. B. FOSTER CO.

CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as IEN - 1237

The Chromalox Catalog is filled with valuable data on the use of electric heat to lower costs and increase production in your plant. It shows over 15,000 types and sizes of electric heaters for heating air and other gases, liquids, viscous fluids and solids; for heating dies, molds, platens, moving parts and other equipment. A section is devoted to the new all-metal radiant heaters for baking, curing, drying and other infrared applications. Put Chromalox Electric Heaters to work in your plant.

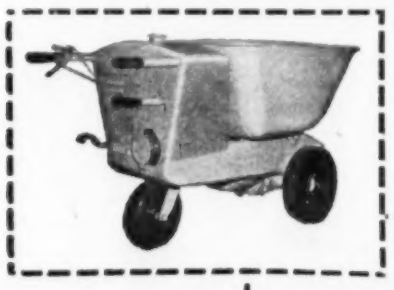
WRITE FOR YOUR COPY OF CHROMALOX CATALOG 50 TODAY.

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.
See Chromalox Radiant Heaters Advertisement, Page 5

CHROMALOX IB-24

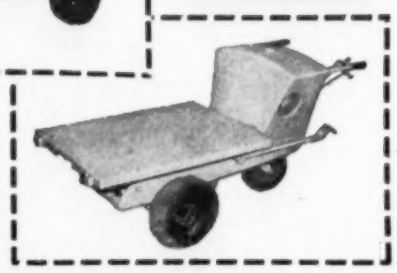
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 1238



BULK HANDLING

Bell PRIME-MOVER



Bucket and Platform interchangeable in a jiffy. Handle up to ¾ ton load — up grades and down — through narrow aisles and doorways.

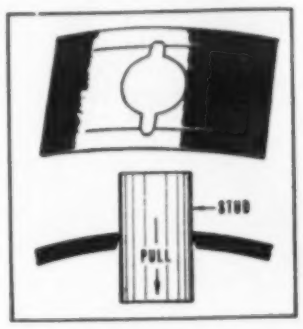
MOVE your materials — bulk or packaged — with equipment not limited to specific jobs—consolidate those intermittent handling jobs, outdoors or in confined areas—supplement and relieve your specialized equipment and complete the mechanization of your materials handling.

If you're processing bulk materials—disposing of waste and scrap—using materials in maintenance or construction—shifting heavy maintenance equipment—maintaining grounds—or loading, unloading bulk or packaged goods from cars, toss your problems on the Prime-Mover and get the job done—quickly and economically. Prime-Mover Co., Muscatine, Iowa.

If you write maker identify as IEN - 1239

FASTENER . . Spring steel clip grips unthreaded stud when pressed on

Source: PRESTOLE CORP.
1325 Miami St., Toledo 5, Ohio



Push to grip

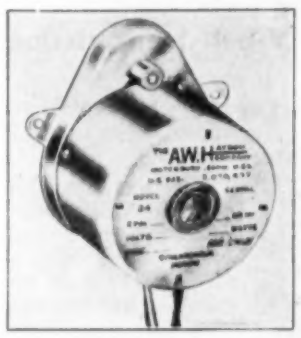
Three sizes measure $\frac{3}{16}$ by $\frac{5}{8}$ in. to $1\frac{1}{8}$ by $\frac{3}{4}$ in. in this new Series-2500 Push-On fastener. The unit is available for application on unthreaded studs measuring $\frac{3}{32}$ to $\frac{7}{16}$ inch. Material thickness is 0.012 to 0.020 in. to meet requirements.

Pressing the fastener into place against a base causes the arch to close in against the stud with a biting action that will hold on soft plastic, fiber, metal, studs that are either straight or tapered. None require threading or a gripping shoulder. Finishes include blued and oiled, Parkerized, Irco-sealed, cadmium or zinc plated.

If you write maker identify as IEN - 1240

MOTOR . . Synchronous design for timing operation on 400 cycle ac.

Source: A. W. HAYDON CO.
230-34 N. Elm St., Dept. 2, Waterbury 20, Conn.



Six watts input

New motor, for 400-cycle ac. is designed to operate on 110-volt input to provide 0.025 oz. in. of torque in starting and in running at 3,000 rpm. Power input is 6 watts. The motor can be supplied with a geared head for any speed below 3,000 rpm. to $1\frac{2}{3}$ rph. The motor provides instant starting and stopping. Weight is 8 ounces.

If you write maker identify as IEN - 1241

CRANE . . Engine driven hydraulic, mounts on 1½-ton or larger truck

Source: BADGER MACHINE CO.
51 Front St., Winona, Minn.

Construction, maintenance

A hydraulic pump with a Wisconsin gasoline engine provides power to operate the boom on this new self-contained assembly of the power take-off equipment previously described IEN-8057-51. Load capacity is 1,500 lb. on a 15-ft. radius. Lift height is to 23 feet. Weight is 3,000 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1242

CUT COSTS . . . SPEED PRODUCTION

BRADY STOCK

QUIK-MASKS®

MOUNTED ON CARDS for

• PAINTING • PLATING
• TUMBLING • BUFFING

Protect machined parts, name plates, holes, threads, designs, etc., during finishing operations. Eliminate slow, costly hand cutting of masks and stencils.

Self-adhesive Brady QUIK-MASKS are pre-cut to sizes and shapes you need. They come mounted on handy dispenser cards or individual liners for speedy application. You just *peel, press, protect.* Hi-Heat resistant to 300° F. Quickly removed after baking without residue. Squares, circles and rectangles in all standard production sizes available from stock. Specials made to your exact requirements. Send for FREE samples and idea-packed literature.

WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED ROLL TAPE · MASKS & STENCILS

MANUFACTURERS OF SELF-STICKING PRODUCTS

W. H. BRADY COMPANY

756 WEST GLENDALE AVE., MILWAUKEE, WIS.

If you write maker identify as IEN - 1243

MODEL FA

SAVE with low-cost, high-speed wrapping

Our Model FA can wrap as many as 100 packages per minute in almost any material you choose. The simplest adjustments allow for changeovers to a different package size. And you need only one operator. It's easy to see why the FA is the world's most widely-used wrapping machine.

We have many other models of wrapping and cartoning machines, designed to meet specific needs. Consult our nearest office regarding your particular requirements.

Write for leaflet "Packages that Sell"

• WRAPPING DIVISION •

PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS
NEW YORK · CHICAGO · BOSTON · CLEVELAND · ATLANTA · DALLAS · DENVER · LOS ANGELES · SAN FRANCISCO · SEATTLE · MEXICO D. F.

If you write maker identify as IEN - 1244

THERE are seven stock resistors and eleven made-to-order resistor types in Ward Leonard's line of Vitrohm resistors to give you accurate, uniform, dependable current control.

This is the largest selection of stock resistors, and the most complete supply of resistor components ready for immediate assembly to your particular specifications, ever offered by any manufacturer.

Find out for yourself how Vitrohm resistors will best meet your requirements in current control. Write for our Catalog 15. Ward Leonard Electric Co., 33 South Street, Mt. Vernon, N. Y.

STRIPOHM RESISTOR for tight quarters in electronic equipment

Save money with Vitrohm resistors. Both stock and made-to-order resistors can be supplied promptly to meet your every resistor need.

3.5

WARD LEONARD ELECTRIC CO.

Result-Engineered Controls Since 1892

RHEOSTATS • RELAYS • MOTOR CONTROLS • CHROMASTER

If you write maker identify as IEN - 1245

CHAMPION DIAMONDS *for Industry*

Look for the CHAMPION Diamond Mark on every Fluorescent and Incandescent Lamp—and you can be certain of the finest and most economical light your money can buy. CHAMPION LAMPS are produced, inspected and tested to meet the exacting standards of performance and long service that are expected of *industrial* equipment. They are backed by fifty-three years of experience in the manufacture of lamps for industry — all kinds — vibration and rough service, spot, flood, etc. CHAMPION LAMPS are stocked by nearby electrical or industrial supply houses.

Buy the Lamp of CHAMPION Value

CHAMPION LAMP WORKS
Lynn, Massachusetts
A DIVISION OF CONSOLIDATED ELECTRIC LAMP CO.

If you write maker identify as IEN - 1246

KEEP 'EM ROLLING! WITH DICO WHEELS

MODERN INDUSTRIAL AND HIGH SPEED WHEELS

6 in. to 24.5 in. Rubber Tire Diameters
Drop Center and Demountable Rim
Pneumatic and Semi-Pneumatic

WRITE FOR DICO WHEEL CATALOG

Let DICO help you with your wheel problems. Catalog contains simplified information and specifications on DICO's dependable high-quality wheels. Write today!

DICO COMPANY 202 S.W. 16th ST., DES MOINES, IOWA

If you write maker identify as IEN - 1247

CUT COSTS . . . FASTEN "ON THE DOUBLE" with the Chicago "214" DOUBLE RIVET SETTER

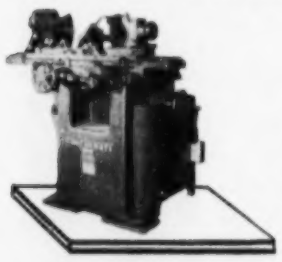
The "214" automatically feeds, inserts and clinches two rivets at a time . . . with speed that may mean a big saving in your fastening costs. 14" throat makes large assemblies easy to handle. For up to 9/64" diameter steel rivets—lengths to ⅞". Quick Change Rotary Type Hoppers and Raceways permit a 5-minute changeover to rivets of different size. Adjustable anvils and riveting centers add to its versatility. Ask us how the "214" can help you cut costs. Send a sample of problem assembly (or blueprint) for Free fastening analysis.

FREE CATALOG

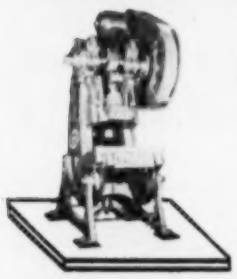
contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.

Chicago Rivet & MACHINE CO.
9602 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois
Branch Factory: Tyrone, Pa.

If you write maker identify as IEN - 1248



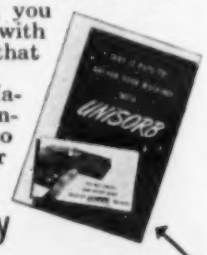
For Longer Machine Life Use UNISORB® Mountings



Eliminate 60%-85% of transmitted machine vibration, reduce machine maintenance and eliminate floor drilling — by mounting your machines on UNISORB.

No bolts, no lag screws when you use UNISORB pads with our special cement. Or, you can use UNISORB pads precoated with adhesive when mounting machines that do not require shimming.

"Why It Pays To Anchor Your Machines With UNISORB" tells the entire story about this modern way to reduce noise and vibration. Ask for your copy. No obligation.

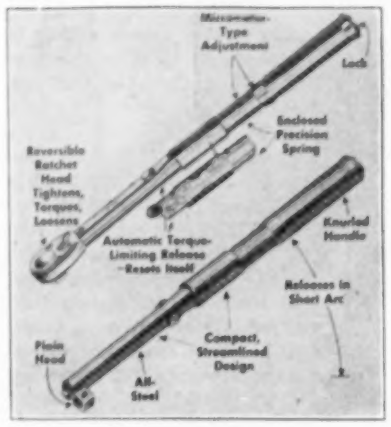


the FELTERS company
208 South Street
Boston 11, Massachusetts
WRITE FOR YOUR COPY OF THIS INTERESTING BOOK

If you write maker identify as IEN - 1249

WRENCH . . Torque limiting design releases pull at adjustable setting

Source: PROTO TOOLS
2207-11 Santa Fe Ave., Los Angeles 54, Calif.



Spring controls release action

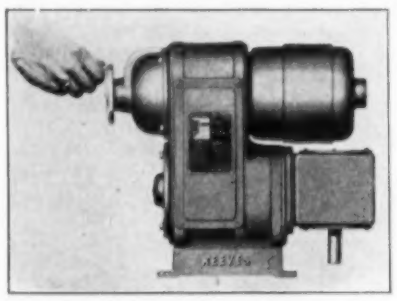
Desired torque is set on this new wrench by turning the knurled handle in connection with a scale, in a manner similar to a micrometer. Any setting within the limits of the wrench then can be locked so it cannot shift. When the preset torque is reached, as the operator pulls on the handle, the wrench releases and signals with a positive reflex action. Resetting takes place on pressure removal.

Two types include a ratchet head for forward and reverse action and a plain head. Three sizes mount ⅜ or ½-in. square drives, rate 5 to 75 ft. lb. or 10 to 150 ft. pounds.

If you write maker identify as IEN - 1250

DRIVE . . Variable speed unit, motor and geared V-belt transmission

Source: REEVES PULLEY CO.
800 N. Wilson St., Columbus, Ind.



Ask for Bulletin M-522

New assembly of the fractional horsepower Vari-Speed Motodrive includes a right angle gear reducer at the output end. The assembly takes a standard NEMA Type-C face mounted motor, the company's standard speed varying mechanism and the new right angle reducer to provide a single unit assembly with a speed ratio from 2 to 10 to 1.

The reducer employs an alloy steel helical worm and a bronze gear enclosed in a sealed housing to operate in oil. Hand wheel control is standard in the design, An electric or mechanical automatic control can be specified.

Identify as IEN - 1251

Evaporator tanks costing $14,000, to handle an aluminum sulfate liquor that is highly corrosive, were made of steel with lead and brick lining. They have been replaced in American Cyanamid Company's Mobile, Alabama plant with Laminac plastic tanks reinforced with Fiberglas mat. The new tanks cost $6,500 each. Dimensions are 14¼ by 8 feet. A stack on each measures 30 in. by 22 feet. It is made of the same material. The company will name the tank makers on request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1252

Bulletin 712 with unfused disconnect switch

Bulletin 712 with fuse block

QUALITY Combination Starters that Reduce Your Installation Costs

In applications where the Electrical Code specifies that a manual disconnect unit must be used . . . ahead of your automatic starters . . . don't use TWO separate units. Install an Allen-Bradley Bulletin 712 Combination Starter. It combines both units in one handy cabinet and makes a neater, compact, up-to-date installation. Available in many types of special purpose enclosures.

Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wis.

ALLEN-BRADLEY QUALITY MOTOR CONTROL

If you write maker identify as IEN - 1253

ASK FOR YOUR FREE COPY

Industrial uses of LULL Shoveloaders:
- Moving
- Lifting
- Loading
- Clearing
- Scraping
- Sweeping
- Snow Removal

Lull Shoveloader is a handy machine to have around the plant. Literally has 101 uses to keep it busy all year 'round. Versatile . . . dependable . . . economical. Material buckets from ¾ to 1 cubic yard capacity . . . 1,800 to 6,000 pounds lifting capacity. Lull Shoveloader attachments include cranes, bulldozers, sweepers, coal buckets, snow buckets, etc.

Send for your free copy now.

LULL MANUFACTURING CO.
362 West 90th Street • Minneapolis, Minnesota

If you write maker identify as IEN - 1254

LIKE AN ATOM-IC EXPLOSION

Just 1/32" (pinhole size) faucet leak
MUSHROOMS into ATOMIC WASTE
of approximately 95,000 gallons
of water yearly—costing:
$24.14
@ $1.90 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 95,000 gallons costs approximately:
$68.01 if coal (9679 lbs.)
$91.08 if oil (792 gals.)
$84.41 if gas (84,411 cu. ft.)

Above figures authenticated by Hackensack Water Co. and American Gas Association.

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with "SEXAUER" "Easy-Tites" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D.
"EASY-TITE" Faucet washers

. . . a modern laboratory triumph, are compounded from du PONT NEOPRENE (tested up to 300° F.) instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day superheating water systems—that formerly broke down washer's structure.

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape . . . causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold FAUCETS—thus you slash water, fuel and labor costs.

THE NEW 'SEXAUER' CATALOG,
Edition O, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. Send for your copy today!

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and *without obligation*.

A postcard will bring him and your NEW Catalog promptly.
J. A. SEXAUER MFG. CO., INC., Dept. K-23
2503-05 Third Avenue, New York 51.

as advertised in THE SATURDAY EVENING POST

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as IEN - 1256

NEW MEAD INDUSTRIAL AIR POWER CATALOG Ready!

Full of Suggestions for **FASTER, CHEAPER PRODUCTION!**

Illustrated, describes Air Cylinders, Valves, Air Operated Presses, Vises, Chucks, Hammers, Drill Press Feeds, Work Feeders, Timers, semi-automatic combinations, etc. **Pneumatic Cylinders.*

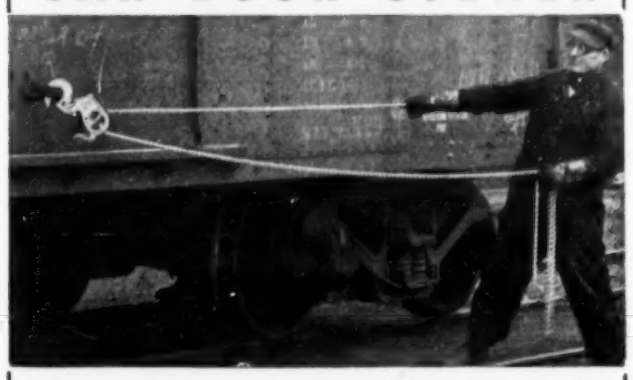
Write for Complete Catalog!

MEAD SPECIALTIES COMPANY

4114 NO. KNOX AVE., DEPT. EA-23, CHICAGO 41, ILL.

If you write maker identify as IEN - 1257

NOLAN ONE-MAN CAR DOOR OPENER



Opens Doors in 20 seconds or less!

The Nolan Car Door Opener gives one man a tremendous amount of pulling energy, to get the most stubborn, hard-rolling door wide open in a hurry!

No gangs needed. No mangled limbs or loss of life. A few quick pulls on anchor chain gets any door open in a jiffy. The NOLAN saves its low initial cost in first hour of operation.

New safety and efficiency features now make the Nolan 1-Man Car Door Opener a more necessary labor-saving, money-saving help than ever before.

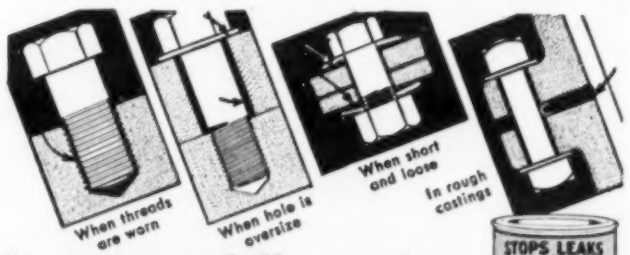
MANY THOUSANDS IN CONSTANT DAILY USE! FREE LITERATURE.

Order one or more NOLAN Model-H Car Door Openers now. Catalog on request.

$29.50 F.O.B. Bowerston

THE NOLAN COMPANY • 114-C Pennsylvania St., Bowerston, Ohio

If you write maker identify as IEN - 1258



How to Solidly Anchor LOOSE BOLTS

Bolts with worn threads—undersize bolts in oversize holes—bolts passing through thin walls—bolts holding ill-fitting cast flanges — all can be tightened firmly with quick-setting Smooth-On No. 1 Iron Cement. Use it, too, to lock nuts tight, and to cover and protect countersunk bolt heads in metal or wood. These repairs stay tight because Smooth-On expands slightly as it hardens. Buy Smooth-On No. 1 in 7 oz., 1 lb., 5 lb., 20 lb., or 100 lb. size and keep it handy. If your supply house hasn't Smooth-On, write us.

FREE REPAIR HANDBOOK

40 Pages filled with time-saving, money-saving repairs on plant, shop and home equipment made with No. 1 and other Smooth-On Cements. Drop us a line for YOUR free copy.

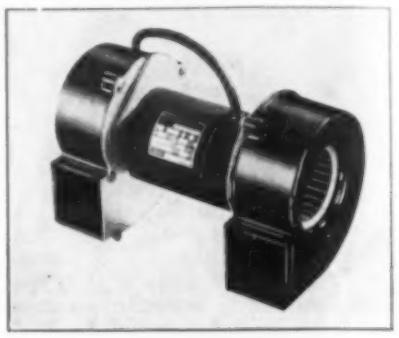
SMOOTH-ON MFG. CO., Dept. 1
570 Communipaw Ave., Jersey City 4, N. J.

Do it with **SMOOTH-ON**
THE IRON REPAIR CEMENT OF MANY USES

If you write maker identify as IEN - 1259

VENTILATING . . Motor driven blower circulates air in an equipment housing

Source: HOWARD INDUSTRIES INC.
1758-62 State St., Racine, Wis.



Just a handful

Model 2914 is a new assembly of two miniature centrifugal blowers and the company's Cyclohm induction motor rated at 0.01 to 1/15 hp. The motor operates at 1,650 rpm. It is available with ball or sleeve bearings. Delivery rating of each blower is 37 cfm. on 95-volt ac. input. Intended application is to keep enclosed electronic equipment cool in operation.

If you write maker identify as IEN - 1260

CORROSION PROOFING . . Contract service to porcelain enamel steel

Source: SEAPORCEL METALS INC.
28-22 Borden Ave., Long Island City 1, N. Y.

Substitute for stainless steel

The company announces development of a new porcelain enamel, Type CRC-14. It is capable of withstanding a boiling solution of 1 per cent sulphuric acid with negligible weight loss. At the same time, the enamel provides excellent resistance to thermal shock and compares favorably with stainless steel when it has been applied on low carbon steel. This characteristic suits it to replace stainless in a good many places.

Possible applications include linings for vats, pipe lines to carry foods, chemicals, pharmaceuticals, flue linings exposed to acid fumes, installations where frequent and sharp temperature changes are encountered. The company is prepared to apply the enamel in specified colors and textures on steel products shipped to it for this purpose.

If you write maker identify as IEN - 1261

JACK . . Hand hydraulic design, for vehicle servicing, rates 4 ton

Source: MILWAUKEE HYDRAULIC PRODUCTS CORP.
802 S. 108th St., Milwaukee 14, Wis.

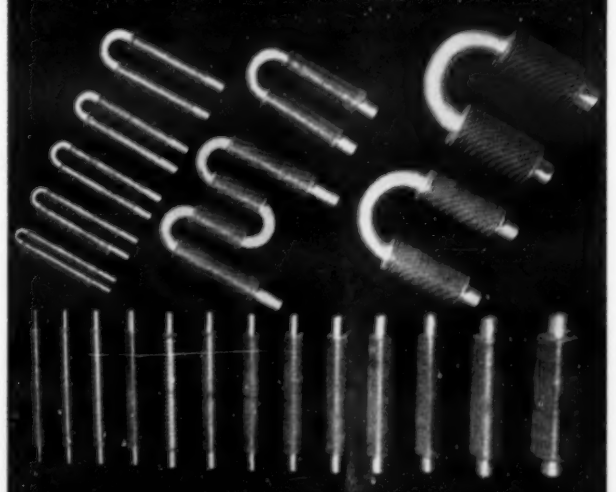
Holds in any position

The company has added a new 4-ton assembly to its previously developed 2-ton hand hydraulic jack for servicing cars and trucks. The new jack provides a lift to 24 in. from 4⅝ in. above the floor. Its 4-ton rating applies at any position in between. Overall dimensions are about 31½ by 12½ by 7 inches. Mounting is on 4½-in. wheels at the front and 2½-in. caster wheels at rear, all ball bearing design.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1262

RO-FIN TUBES
IDEAL SURFACE FOR HEAT TRANSFER



Over 100 sizes in production!

ROME TURNEY RADIATOR COMPANY

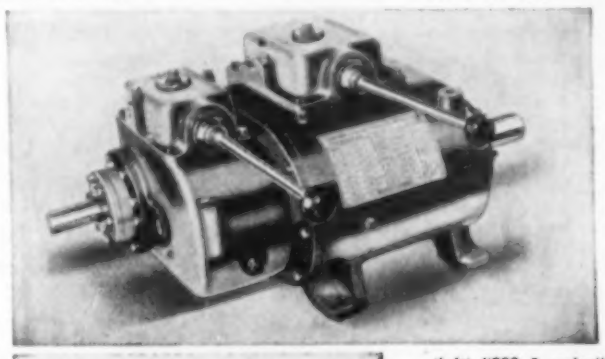
200 East Front Street • Rome • New York

If you write maker identify as IEN - 1263

WESTERN "SUPER" *with* 8 SPEED CHANGES

For use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills. CAPACITY 50 HP.

In geometric progression of 1.29 (total reduction of 6:1)



(left) "900 B series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever automotive type. Ratios — 1:1, 2:1, 3:1, 4:1.

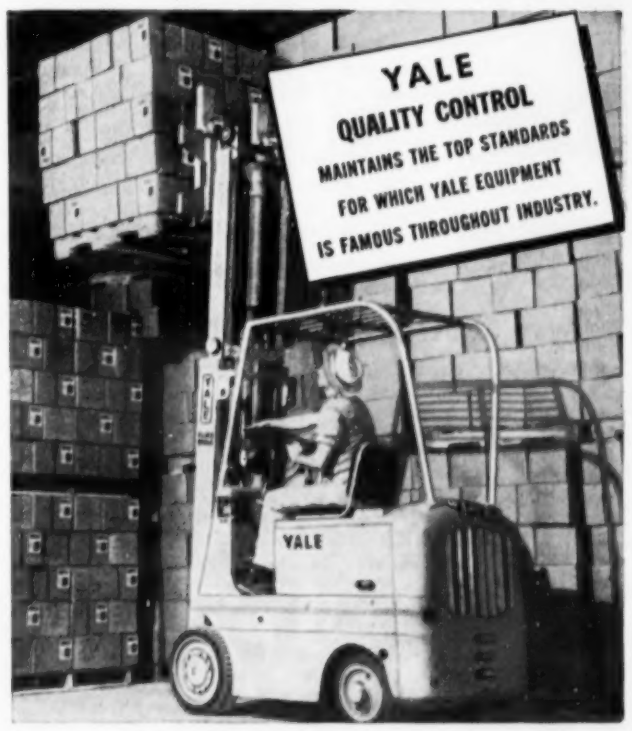
On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . *we can supply the necessary V-belts, sheaves, output pulleys, and motors from stock.*

up to 100 h. p. For Motorizing Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Slotters, Bolt Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.

WESTERN TRANSMISSIONS
WESTERN MANUFACTURING CO. — 3400 SCOTTEN — DETROIT, MICHIGAN

If you write maker identify as IEN - 1264

Again in '53 YALE *sets the pace*



Give this great YALE truck every test you know. Run it fully loaded on ramps, indoors and out. See the power it delivers...the fuel economy it gives. Let operators test it for smoothness...for maneuverability...for safety ...for features...and you'll see why it's the standout truck of this or any other year.

YALE* *MATERIALS HANDLING EQUIPMENT*
**Registered trade mark*

MAIL THIS COUPON TODAY

The YALE & TOWNE Manufacturing Co., Dept. 362
Roosevelt Blvd. and Haldeman Ave., Phila. 15, Pa.

☐ Please send me *The Picture Story of Yale Materials Handling Equipment*

☐ Please have your local representative call for an appointment

Company_____
Name_____ Title_____
Street_____ City_____ State_____

In Canada write: The Yale & Towne Mfg. Co., Box 337—Postal Station "A"—Toronto

Gas and Electric Industrial Trucks • Worksavers • Hand Trucks Hand and Electric Hoists • Pul-Lifts

If you write maker identify as IEN - 1266

Rolling Steel Doors

Manually, Mechanically, or Power Operated

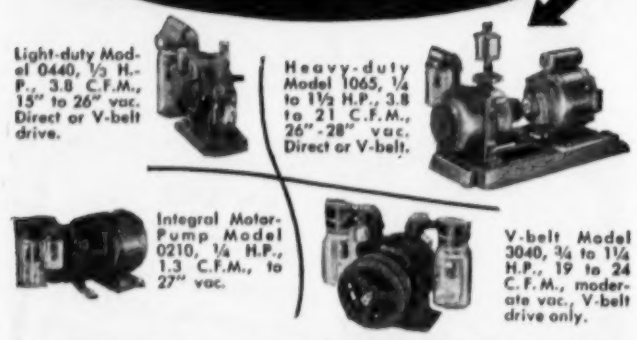
Below you see Mahon Power Operated Rolling Steel Doors installed in six truck openings to a motor freight loading dock. Another Mahon Power Operated Rolling Steel Door 17'-0" x 22'-0" is installed in a railroad opening in connection with this same loading dock. Rolling Steel Doors occupy no usable space either inside or outside the opening . . . they create no overhead obstructions—cranes may be employed to handle materials adjacent to the door opening. Quick opening, quick closing, vertical roll-up action saves valuable time . . . all-metal construction provides permanence, greater protection against intrusion and fire, and assures you a lifetime of trouble-free service. Write for Catalog containing complete information including Specifications.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as IEN - 1267

Specify these GAST rotary-vane VACUUM PUMPS to solve your original equipment problem—



CHOOSE FROM A WIDE RANGE OF SIZES, TYPES

Gain lower maintenance and higher performance for your own products. Select the pump that fits your application from any of these types — in numerous sizes and combinations. Choose integral-motor, V-belt or direct drives, with or without bases or accessories, such as lubricators, mufflers, fans, filters.

Get the complete story . . . see how Gast Dry Vacuum Pumps excel for vacuum feeding, holding, testing, filtering. *Write for Catalog and Application Ideas Booklet!*

Original Equipment Manufacturers for Over 25 Years

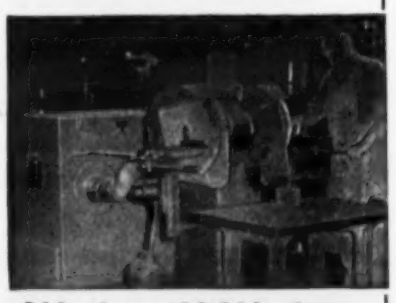
GAST ROTARY — AIR MOTORS (TO THREE H.P.) • COMPRESSORS (TO 30 LBS.) • VACUUM PUMPS (TO 28 INCHES)
GAST MANUFACTURING CORP., 220 Hinkley St., Benton Harbor, Mich.

If you write maker identify as IEN - 1268

STOP DUST

INSTANTLY with DUSTKOP

DUSTKOP 1400 cfm.



DUSTKOP 3600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

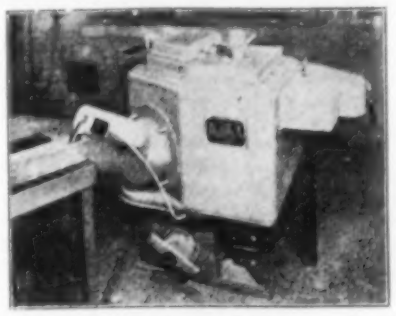
Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

If you write maker identify as IEN - 1269

DIE CASTING . . Induction furnace holds and feeds molten aluminum

Source: AJAX ENGINEERING CO.
101 Hancock St., Trenton 7, N. J.



Replaces hand ladling

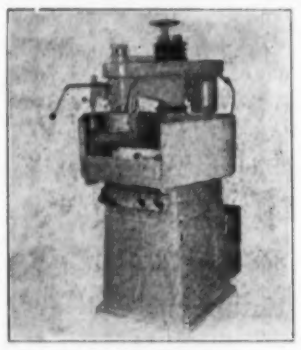
Molten aluminum is held at required temperature and is fed in measured amount to a die casting machine, in step with the machine's operation, by this new Ajaxomatic holding and pouring equipment. It is kept supplied from a standard melting furnace by pouring in additional aluminum from time to time. It holds this aluminum at a predetermined temperature set on a control housing that forms part of the standard equipment.

The aluminum is drawn from beneath the surface of the molten metal and delivered through a spout in amount and at intervals as determined by settings at dials also on the control housing. Normal range is from ½ to 5 pounds. Castings to 20 lb. can be produced with some modification.

If you write maker identify as IEN - 1270

GRINDING . . Vertical surface machine combines hand and power head swing

Source: GEORGE SCHERR CO.
202 Lafayette St., New York 12, N. Y.



Made in Germany

The wheel head on this new Bruckner vertical surface grinding machine takes a standard 7½-in. Norton cup wheel and employs a 1½-hp. motor drive. The head is mounted on a column about which it can be swung freely by hand for rough grinding operations. Then it connects to a power feed for finish work. A dresser is mounted beside the wheel. Vertical adjustments are made at a hand wheel on the column and at the upper end of the spindle where a graduated thimble reads in 0.0004 in. divisions.

Greatest distance between the wheel and table is 11 inches. This is reduced to 8¼ in. when the machine is equipped with its permanent magnet chuck. Working surface over the chuck measures 14½ by 6 inches. Standard equipment includes a pump for wet grinding. Weight is 1,584 pounds.

Identify as IEN - 1271

Quantity production of hermetically sealed transformers, to MIL-T-27 specifications, is announced by A.J.F. Industries. Sizes range from sub-sub-miniature to 1 kva. for audio, plate and filament on a temperature rise of 40 deg. C. on 65-deg. ambient. Samples can be delivered in about three weeks, quantity production in six weeks after sample approval.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1272

A PAID NEWS ADVERTISEMENT BY MATHEWSON MACHINE WORKS

NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ¼" to 1¼", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to: **Mathewson Machine Works, 26 Hancock Street, Quincy, Mass.**

If you write maker identify as IEN - 1273

New, Larger COVER GOGGLES

fit over ALL modern glasses . . .

New CESCO series 548 and 549 Cover Goggles are 20% larger than former cover goggles. Contoured edges with wide surfaces eliminate pressure on nose, seal out flying particles or light flashes. Standard 50 mm lenses are quickly changed from front. Both chippers and welders models are well ventilated to reduce fogging. Simplified bridge adjustment. 3 headbands.

See or write your CESCO safety equipment distributor for full details

Features

- Lightweight sturdy plastic, contoured edges
- Ventilated lenses with baffled air flow
- Sideshields— Baffled for welding Perforated for chipping or grinding

CHICAGO EYE SHIELD COMPANY • 2326 Warren Blvd. • Chicago 12, Ill.

CESCO FOR SAFETY

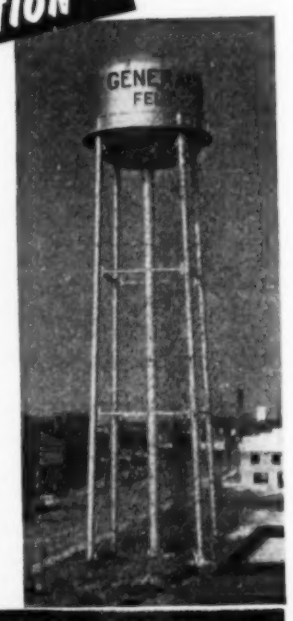
OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City, D. F., Milwaukee, Montreal, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa

If you write maker identify as IEN - 1274

TRIPLE FIRE PROTECTION

for General Felt

General Felt Products Company installed a 100,000-gal. Horton elevated tank as a third source of water for fire protection at its Chicago Heights, Ill., plant. The other sources are the City water mains and a fire pump. Horton elevated tanks are built in standard capacities from 5,000 to 3,000,000 gallons. For estimates, please write our nearest office, stating capacity, hight to bottom, location and type of insurance carried.

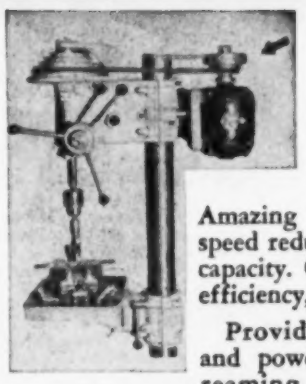


CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • San Francisco
Seattle • Tulsa • Washington, D.C.
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA

If you write maker identify as IEN - 1275

New "PULL-GEAR" SPEED-REDUCING PULLEY

Increases Drill Press Capacity



Amazing new internally geared speed reducer doubles drill press capacity. Greater power, greater efficiency, greater productivity.

Provides the correct speed and power for larger drilling, reaming, tapping and boring on light presses. Easily installed in five minutes. Adaptable to all type machines. Spindle speed range approximately 45 to 2000 RPM. Write for literature.

Made in 3 Motor Shaft Sizes ½" • ⅝" • ¾"

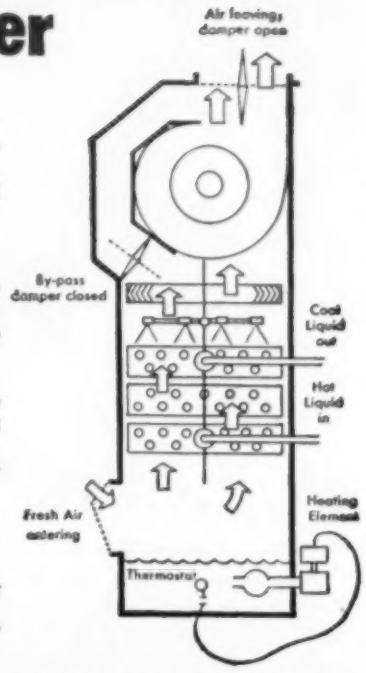
Some Territories Open to Jobbers

THE PULL-GEAR CO.
21125 Dequindre St. Hazel Park, Michigan

WRITE FOR LITERATURE

If you write maker identify as IEN - 1276

NIAGARA Aero Heat Exchanger



1. Extends quenching capacity without extra water or cooling tower.
2. Quickly pulls down heat at initial peak load of Quenching.
3. "Balanced Wet Bulb" Control holds quench bath at proper temperature, heating if needed to start after shut-down, and cools or heats by automatic control.
4. Saves cleaning expense as compared to cooling tower which picks up acids and fumes from air.

APPLICATIONS

Quench Oils
Cutting Oils
Lubricating Oils
Cooling Water

For help in increasing production, saving of cooling water, write for Bulletin No. 120. Address

NIAGARA BLOWER COMPANY

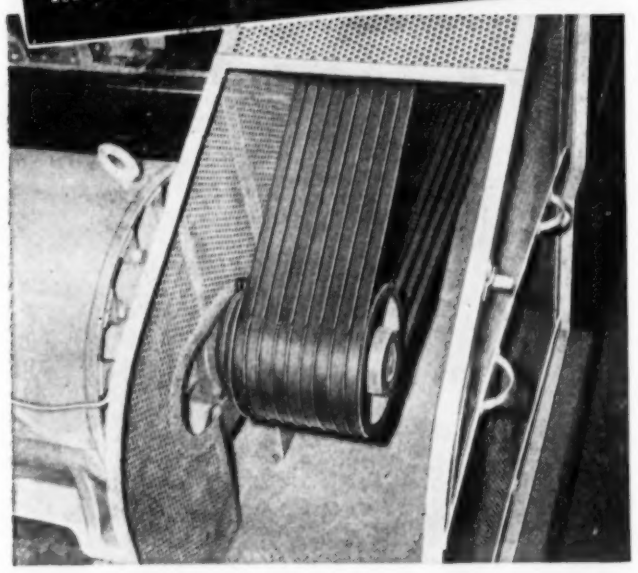
Over 35 Years of Service in Industrial Air Engineering

Dept. EN, 405 Lexington Avenue New York 17, N. Y.

Experienced District Engineers in all Principal Cities of U. S. and Canada

If you write maker identify as IEN - 1277

Better rubber products are made with Du Pont NEOPRENE



Neoprene V-belts resist heat, oil, constant flexing . . . have long service life

Whipping through sheaves at high speed—often exposed to heat and lubricating oil—a V-belt has to be able to take it from the first day of installation. V-belts made with cover and core of neoprene are built for this kind of service . . . service where operating conditions are most severe.

Flexible and tough, neoprene V-belts resist high temperatures that soften and weaken ordinary belts. They withstand flexing and abrasion from sheaves through countless revolutions. Even lubricating oils and grease have little deteriorating effect.

In V-belts, as in thousands of other resilient products, the remarkable properties of Du Pont neoprene add durability and improve performance. While Du Pont makes no finished products of neoprene, your manufacturer or distributor will gladly tell you about the neoprene products he supplies.

FREE! THE NEOPRENE NOTEBOOK

Full of interesting stories. New, unusual applications of neoprene to build new products . . . improve old products . . . reduce maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Division D-2, Wilmington 98, Delaware.

NEOPRENE

The rubber made by Du Pont since 1932

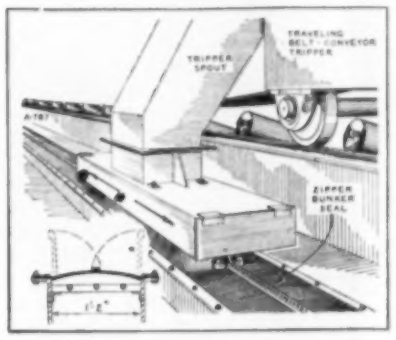
DU PONT

BETTER THINGS FOR BETTER LIVING . . . *through Chemistry*

If you write maker identify as IEN - 1279

CONVEYING . . Zipper type closure keeps dust inside conveyor fed hopper

Source: STEPHENS-ADAMSON MFG. CO.
231 Ridgeway Ave., Aurora, Ill.



Ask for Bulletin 952

New **application** for the company's zipper-type moving tube conveyor construction forms a seal on the two sides of a movable discharge hopper riding above a coal bin in a filling conveyor line. The toothed construction, previously described IEN-1102-48, is applied on the edges of two belt strips in connection with an opening and closing mechanism that rides with the discharge spout.

The assembly extends to both sides of the traveling discharge to keep the opening in a bunker tightly closed except at the point where material is flowing in. A metal shield on the discharge unit completes the seal. Grate bars, under the sealing belts, protect the operator from accidental injury if he should step on or through the belts.

If you write maker identify as IEN - 1280

PRESS TOOLS . . Ratchet index wheel for roll feed, adjusts to 0.0006 inch

Source: DURANT TOOL SUPPLY CO.
153-57 Orange St., Providence 3, R. I.

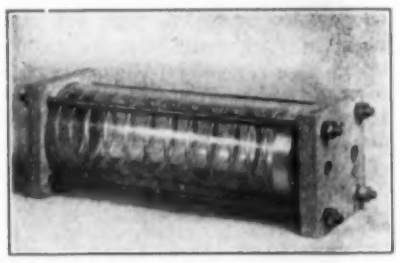
Please note our error

We reported the company's new roll feed index in IEN-915 last month as adjustable to 0.006 inch. This should have read to 0.0006 in. which is a really close adjustment.

If you write maker identify as IEN - 1281

LUBRICATING . . Cylinder and piston with spring action to feed grease, oil

Source: ABAR PLASTICS CO.
6941 Formosa Way, Pittsburgh 8, Pa.



Built to order

Lucite cylinder and metal end caps, held in place by tie rods, enclose a **spring** backed piston in this new Lubrication Tank. The piston is fitted with a cup leather. One head is drilled and threaded to take inlet and outlet lubricating lines. The Lucite provides a view of the interior so the operating condition and remaining supply of lubricant can be seen.

Various sizes can be specified, the unit shown measuring 22 by 7 by 7 inches. It weighs about 35 lb. and lists at $45.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1282

Production Goes Up

Costs Come Down

when you order Stanzoils by PIONEER

Proper protection and comfortable fit go hand in glove with Stanzoils to boost your workers' efficiency and send your company's profits soaring! Work stoppage and injury claims decrease . . . medical expenses decline . . . employee relations improve and production increases—when you order the *right* liquid tight acid and oil resistant neoprene Stanzoil gloves for *each* job. Choice of 32 longer-lasting styles, weights, sizes, colors . . . write for PIONEER Stanzoil catalog today.

N-32 medium weight straight finger style neoprene glove. Non-slip grip surface. 10½" length.

Industrial Products Division

The PIONEER Rubber Company

235 TIFFIN ROAD • WILLARD, OHIO

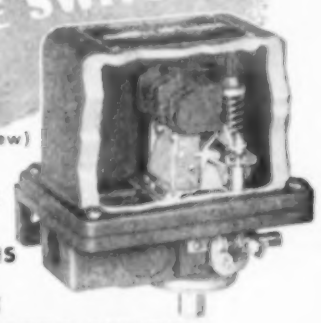
STANZOIL

Quality Gloves for 35 Years

If you write maker identify as IEN - 1283

New!

EXPLOSION-RESISTING PRESSURE SWITCH



FOR AIR COMPRESSORS AND PUMPS USED IN HAZARDOUS LOCATIONS

THESE FEATURES ADD UP TO A BETTER SWITCH:

- 200 lb. range and usual differential for air compressors and pumps
- Tamper-proof adjustment
- "Power-house" over-center spring fixed for positive action regardless of switch adjustment
- Externally mounted release valve protects against corrosion of internal parts

Also available in WATER-TIGHT construction

Write **for Bulletin 9013-G.**

Address Square D Company, 4041 N. Richards St., Milwaukee 12, Wis.

SQUARE D COMPANY

If you write maker identify as IEN - 1284

STOP ACCIDENTS with BRADY SAFETY SIGNS

Here's an AMAZING BRAND NEW SAFETY SIGN that will be welcomed by Safety Men! Brady Safety Signs stick to wood, glass, metal, concrete, etc. without moistening. May be applied to any clean surface in a jiffy. No screws, nails, bolts or skilled help necessary. All you do is peel from card, apply where wanted and the sign is up to stay.

Brady Safety Signs are made of durable cotton cloth, Silicone Coated to resist dirt, grime and moisture. CONFORM TO ASA Standard Z35.1-41. Select your requirements from a complete catalog of standard safety messages. Cost only a few cents per sign. Immediate delivery. Specials made to order.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

WIRE MARKERS
PIPE MARKERS
SAFETY SIGNS
PRINTED ROLL TAPE
MASKS & STENCILS

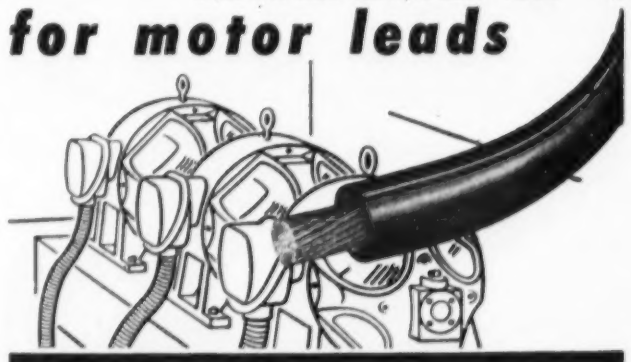
MANUFACTURERS OF SELF-STICKING PRODUCTS

W. H. BRADY COMPANY

743 W GLENDALE AVE., MILWAUKEE, WIS.

If you write maker identify as IEN - 1285

for motor leads



...OKOLITE-OKOPRENE

Keep your electrical circuits *strong*, free from weak spots which may disrupt production. On motor leads, and *throughout* your plant circuits, specify Okolite-Okoprene wires and cables. Here's why:

Moisture resistant Okolite Insulation is designed for continuous power loads, three shifts per day, year after year.

Flame resistant Okoprene Sheath protects against abrasion, heat, mechanical damage, oils and acids.

Insulation and sheath are applied by Okonite's strip process and vulcanized in a metal mold, giving greater stability and longer life to both. Write for Bulletin IE-1053, The Okonite Company, Passaic, N. J.

The best cable is your best policy

OKONITE *insulated wires and cables*

If you write maker identify as IEN - 1286

NEW

HYDRAULIC HOSE COUPLING AND ADAPTER UNION

Leakproof at pressures to 5000 psi when drawn up *hand tight!*

- Coupling and adapter absolutely leakproof.
- Used by U.S. Marine Corps on earth moving equipment and by U.S. Navy on rocket launching equipment.
- O-ring packing seals coupling against leakage; easily replaced when worn.
- Eastman "Dryseal" pipe thread permits operation even if O-ring is damaged.

Write for free Catalog 101 on Eastman Hydraulic Hose Couplings and Fittings. Call on our 25 years' experience for engineering counsel on your applications of hydraulic power.

"Safeguarding Industry's Lifelines of Mobile Power"

EASTMAN MANUFACTURING CO.
Since 1914
Dept. IE2, Manitowoc, Wisconsin

Eastman *first in the field* HYDRAULIC HOSE ASSEMBLIES

EASTMAN MR COUPLINGS Available in: ½", ¾", 1" and 1¼" sizes.

If you write maker identify as IEN - 1287

A GRINDING AND POLISHING UNIT!

As shown here, the 6-72 Vonnegut Abrasive Belt Unit is set up as a *lathe attachment* for cylindrical grinding and polishing. The same basic unit can be used as a *floor stand* and also as a *swing machine.* But that's not all—it has proved its value as a grinding and polishing unit for special machines, and as an attachment for other machines. There is the possibility that it can be used for an entirely new application in *your* plant. If you find that possibility, write us about it—we'll be glad to help you work out the details. Send for Bulletin No. 62.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
2530-D WINTHROP AVE., INDIANAPOLIS 5, IND., U.S.A.

If you write maker identify as IEN - 1288

Wind 3-Phase Coils Faster—at Lower Cost

Built exclusively for 3-phase winding of all mush type coils from 2¼" x 5" to 11½" x 19½"... Winding arms are rigid under load, insuring precision accuracy that makes insertion into slots easier. Sets up in seconds, with adjustment by permanently mounted cranks, without removing head from drive. Winds up to 6 perfect coils at one time. Minimum wire tension prevents excessive wire stretch. *A time and money-saver too good to miss!*

● Also "Universal" and "Midget" Winder Heads for many types and sizes of coils.

FREE CATALOG

CROWN INDUSTRIAL PRODUCTS CO.
402 Borden Avenue, Sycamore, Ill.
Please send me your catalog on Coil Winding Heads and complete motor repair shop equipment:
Name.....
Company.....
Address.....
City.....Zone....State.....

If you write maker identify as IEN - 1289

HOIST . . Portable ratchet design to lift and pull, rates to 1½ ton

Source: LUG-ALL CO.
329-33 E. Lancaster Ave., Wynnewood 3, Pa.

Ask for Bulletin 261

Two new sizes have been added to the company's Lug-All hand operated ratchet hoist, previously described IEN-5045-49. One is a new light duty assembly with 25 ft. of 5/32-in. aircraft type wire rope to provide capacity of 1,500 lb. when double rigged or 750 lb. when single rigged. The other is a medium duty unit with 15 ft. of 3/16-in. wire rope. It rates 2,250 lb. double rigged or 1,125 lb. single rigged.

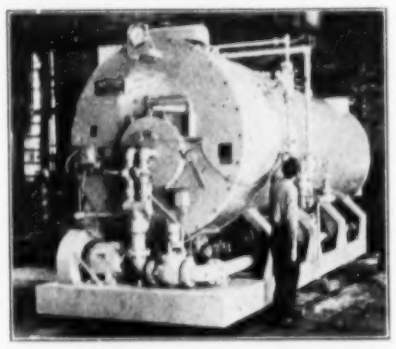
In both the operating handle or lever is secured to the ratchet mechanism in an arrangement that permits reversing to apply in confined locations. The handle will bend before the hoist can be overloaded. It can be removed, when set up on a job, to prevent tampering. Weight of Model 2250 is 8½ pounds. List price is about $34.

In addition to the two new hoist sizes the company has added a number of accessories including hooks, multi-purpose kits, various types of slings. All are shown, described and priced in Bulletin 261, available upon request.

If you write maker identify as IEN - 1290

BOILER . . Self-contained design to 600 hp., operates on oil or gas

Source: AMES IRON WORKS
Box R-2-A, Oswego, N. Y.



Features accessibility

Twenty sizes are now available in a range between 10 and 600 hp. following addition of the 600-hp. unit to the company's line of self-contained boilers, previously described IEN - 2912-50. Pressure rating remains at 15 to 200 pounds. Equipment includes complete appatus to burn oil, gas or an interchangeable combination, the controls required for automatic operation, complete steam trim and a metal jacketed insulated boiler shell. A receiver and feed pump are supplied for 100-lb. or higher pressure. Assembly is on a structural base that needs no special foundation.

Identify as IEN - 1291

Nominations for the Doehler Award for the advancement of die casting are now in order on invitation by the American Die Casting Institute prior to May first. Entries should be addressed to the Award Committee. All are judged and the Award is made in September. It amounts to about $500.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1292

Warm COLD FEET with • THERMO-MAT •

Here's INSTANT RELIEF from cold, aching feet, at work or at home, sitting or standing! THERMO-MAT emits PENETRATING RADIANT WARMTH extending from toes to knees! Licks cold floor problem everywhere—*drafty locations, unheated rooms, booths, concrete floors, etc.!* Unaffected by dampness.

Plugs into 110 Volt socket—uses only 125 Watts. Size 14" x 22", full neoprene covered. **(No rubber)**

PRICE **$12.00** Shipped Postpaid

SAFE, ECONOMICAL *Order now by mail for all uncomfortable locations. Describe conditions of use, type of floor, outside or inside installation.*

THERMO-MAT CO.
814 SOUTH ROBERTSON BOULEVARD • LOS ANGELES 35, CALIFORNIA

If you write maker identify as IEN - 1293

It's for You!

HOW TO
★ *Save Time*
★ *Save Floor Space*
★ *Reduce Handling Costs*

all in this FREE BULLETIN

On-the-job photos demonstrate the many advantages of the Nutting Jack and Skid System. It is easy and inexpensive to install—and it is so flexible to varying plant layouts that there is scarcely a materials handling problem to which it cannot be profitably applied.

SEND FOR YOUR COPY OF BULLETIN 48-JS NOW

SINCE 1891 *Nutting* TRUCK AND CASTER CO.
2014 DIVISION ST., W., FARIBAULT, MINN.

If you write maker identify as IEN - 1294

Feature For Feature... Atlas is your BEST BUY!

Atlas 10" "QUICK-CHANGE" LATHE

TIMKEN BEARINGS!

HEAVY-DUTY PRECISION GROUND BED!

QUICK-CHANGE GEARS!

No other lathe in the low cost field compares with this Atlas 10" "Quick-Change" lathe! It gives you many more features to speed the production of small parts, or handle tool room needs.

It's the only lathe in the low cost field with Timken tapered roller bearings! The bed — with its massive, precision-ground flat ways — is designed for *heavy-duty* operations. The Atlas quick-change mechanism permits instant selection of 54 threads or feeds — saving set-up time, increasing output. Instantly reversible power cross and longitudinal feeds are standard equipment.

10" swing (5⅞" over carriage), 24" and 36" between centers, and 16 spindle speeds from 28 to 2072 RPM (8 back-geared for heavy cuts) give you the capacity to handle a wide range of materials and work.

For close tolerance work and long service — at low initial cost — there isn't a value to compare with the Atlas 10" "Quick-Change" lathe. Prices start at $313.00 F.O.B. Kalamazoo. Send for the latest catalog with complete facts.

PLUS
- ✶ 16 Speeds, 28-2072 RPM
- ✶ Complete V-Belt Drive
- ✶ Power Cross and Longitudinal Feeds
- ✶ 4-240 Threading Range

ATLAS PRESS CO.
207 N. PITCHER ST.
KALAMAZOO, MICH.

Atlas DEPENDABLE QUALITY TOOLS SINCE 1911

If you write maker identify as IEN - 1296

ONE OF AMERICA'S BROADEST LINES OF HORIZONTAL ALL-PURPOSE PUMPS

ILLUSTRATED 2, 3, 5 HP ELECTRIC DRIVE

PEERLESS TYPE PE & TYPE PB PUMPS

PEERLESS PUMPS

OTHER PEERLESS TYPES:

Fractional hp close-coupled

Integral hp flexible-coupled or V-belt drive

Close-coupled & flexible-coupled pumps ¼ to 150 hp—up to 5500 gpm

Write today for Peerless Bulletin No. B-2300. Illustrated with views of all pumps in the Peerless Fluidyne line. Includes sectional drawings, elevations, dimensional data and head-capacity characteristics. You can buy and apply right from this bulletin.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

Los Angeles 31, California and Indianapolis 8, Indiana
Offices: New York, Chicago, St. Louis, Atlanta; Dallas, Plainview and Lubbock, Texas; Fresno, Los Angeles; Phoenix; Albuquerque, N. M.; Tulsa

If you write maker identify as IEN - 1297

It counts your "UPS and DOWNS"

Added Evidence that—

Everyone Can Count on

VEEDER-ROOT

Elevator Mileage Recorders give accurate figures on vertical miles . . . so that it can be plainly seen...*in advance*...when it's time to replace cables, overhaul cars, motors, and what have *you . . . including your life.*

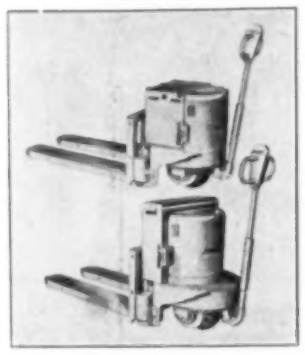
Yes, the V-R wheelmark monogram protects millions of people daily, from the depths of the sea to the stratosphere. Of course, not all V-R Products and services are available nowadays . . . but if your work counts importantly in defense, then you can count on Veeder-Root to help you, as soon as rush commitments permit.

VEEDER-ROOT INCORPORATED
HARTFORD 2, CONN.

If you write maker identify as IEN - 1299

TRUCK . . Electric power lift rates 3 ton for loaded pallets, skids

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.



Operator protected

Powrworker is a new battery operated truck designed primarily to handle loaded pallets. It is available with a hinged rack, mounted to ride at specified height, to also handle loaded skids. Lift movement is through 4 in. by means of a motor driven pump and power cylinder with control at the steering handle. Lowering control is at a plate operated valve on the truck housing. Two designs in the line provide for the operator to walk or to ride as shown in the illustration.

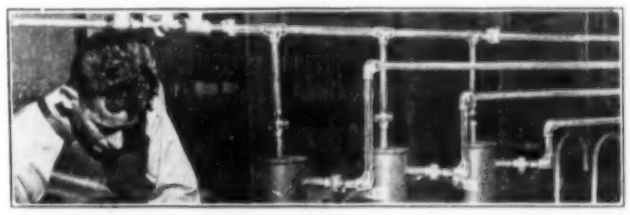
The travel motor mounts with a gear train inside the 14-in. drive wheel which rotates with its brake drum around the motor on ball bearings. The gearing operates in oil in an enclosure sealed from the motor. The motor rides on its own lubricated and sealed bearings. It is compound design for uniform performance free or loaded. The truck can make a 90 degree turn in either direction. It travels at 3⅛ mph. free or 2½ mph. with a rated load.

Travel control, in either direction, centers on the steering handle for two speeds forward and reverse. These controls are interlocked to insure correct operation. They return to neutral if the operator releases them. The brake is applied by allowing the handle to return to vertical position or lowering it to horizontal position. In any case, dynamic braking applies when the operator releases the travel switch.

If you write maker identify as IEN - 1300

PIPE . . Transparent plastic sizes from 1 to 4 in., fittings also

Source: ELMER E. MILLS CORP.
2928-32 N. Ashland Ave., Chicago 13, Ill.



Features low first cost

Mills III is a new transparent plastic pipe to handle oil, water, slurries and a variety of fluid chemicals. It is highly resistant to corrosion and to chemical attack. The pipe is available with a range of plastic fittings, including flange unions and flange adaptor unions that join the plastic to steel or plastic to plastic. Two flange adaptors and a length of the pipe make a first class sight glass.

Pipe sections are joined by application of a solvent cement so threading is not required. The pipe can be cut with an ordinary hand saw. Set-ups can be dismantled and the component parts used repeatedly. The semi-rigid pipe is sufficiently flexible to make broad radius bends and to compensate for considerable mis-alignment. Sizes to 2 in. rate 100 lb. per sq. in. at 100 deg. F. Black pipe also is available.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1301

...Newest of the Safety Stars!

★ *BREATHING—50% easier!*
★ *FILTER—New "Static-Web"!*
★ *MAINTENANCE—25% less!*
★ *WEIGHT—25% less!*
★ *SIZE—35% smaller!*
★ *AIR FLOW—Counter Gravity!*
★ *U.S. Bureau of Mines Approval #2166 for Dust*

Meet our newest safety star! Dustfoe #55 weighs less than 3 ounces—brings you all-star comfort, performance, protection! Revolutionary "Static-Web" throw-away filter retains dust electrostatically, needs no pre-filter. Filter is 50% narrower to eliminate "blind spots." There's nothing finer on any count!

Write for Bulletin & Prices

ALL-STAR ON ALL COUNTS!

McDonald DUSTFOE #55 RESPIRATOR

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as IEN - 1302

INDUSTRIAL INKS To Mark Anything!

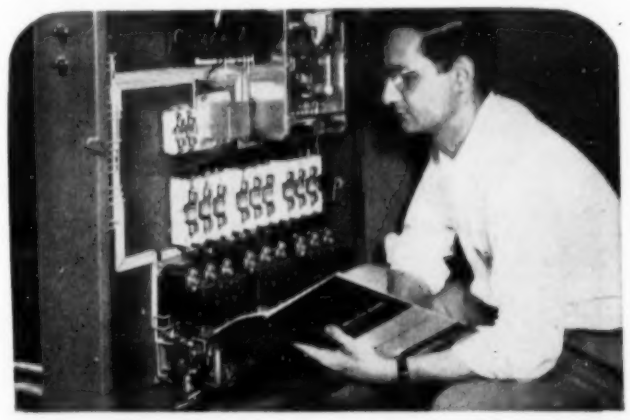
Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

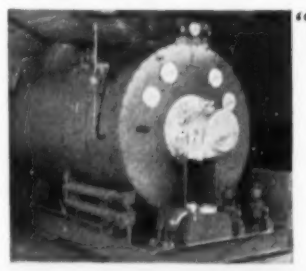
★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

L. A. PHILLIPS, President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as IEN - 1303



"Experience showed us how FUSETRON FUSES Prevent Motor Burnouts... now we protect all Motors on our Units with them!"



"Here's what happened in our plant"

"Back in January of 1951 we had a motor on a pump that was supposed to draw a maximum load of about 8 amperes, yet it began blowing FUSETRON fuses of motor protection size.

"We were inclined to believe something was wrong with the fuses—but after checking with an ammeter we found that an automatic relief by-pass was sticking and causing the motor to draw about 12 amperes.

"If the Fusetron fuses had not opened, the motor would undoubtedly have burned out.

"Now on all our Powermaster Steam Generator Units we use Fusetron Fuses to protect the motors on the fuel pump, the boiler feed-water makeup pump, and the air compressor."

Franklin Van Reed
Production Engineering Supervisor
Orr & Sembower, Inc.,
Reading, Penn.

You, too, can profit by the 10 POINT PROTECTION of Fusetron Dual-Element Fuses...

THE MONEY YOU SAVE . . . by preventing one **needless** shutdown, one **lost** motor, one **destroyed** switch or panel or one **burned out** solenoid . . . MAY MORE THAN PAY FOR the replacement of all your ordinary fuses with Fusetron dual-element Fuses.

BUSSMANN Mfg. Co.
(Div. McGraw Electric Co.)
University at Jefferson St. Louis 7, Mo.

(FUSETRON is a trade mark of Bussmann Mfg. Co., Division McGraw Electric Co.)

FUSETRON
TRUSTWORTHY NAMES IN ELECTRICAL PROTECTION
BUSS

If you write maker identify as IEN - 1305

90-A

This new engineering manual of facts on MUELLER BRASS CO. TUF-STUFF® ALUMINUM BRONZE ALLOYS is ready.

Write for your copy today

MUELLER BRASS CO. • PORT HURON 26, MICH.

If you write maker identify as IEN - 1306

PULPWOOD STACKER

Flexible Stacker Systems for piling pulpwood at low cost. *Write for data.*

JEFFREY

ESTABLISHED 1877
THE JEFFREY MANUFACTURING CO.
914 Fourth Street, Columbus 16, Ohio

If you write maker identify as IEN - 1307

WASHERS and STAMPINGS

Geared to Industry's Production Demands Since 1887

Over a period of 65 years, producing standard and special washers of all types for all industries, we have made up more than 25,000 sets of dies . . . used in the production of washers which are stocked in thousands of different sizes. On special orders we will make up dies to your specifications.

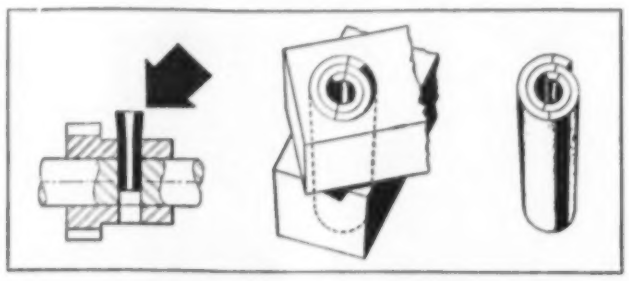
Let us quote on your requirements for washers and stampings . . . covering fabrication in any material and any finish . . . machined, heat-treated or surface ground, as may be specified.

WROUGHT WASHER MANUFACTURING CO.
The World's Largest Producer of Washers
2207 S. BAY ST., MILWAUKEE 7, WIS.

If you write maker identify as IEN - 1308

FASTENING . . Cylindrical coil pin to key and pin equipment assemblies

Source: C. E. M. CO.
22-26 School St., Danielson, Conn.



New sizes for small mechanisms

Three new sizes, the smallest measuring 0.03125 in. in diameter, have been added to the company's line of Spirol pins, previously described IEN-8323-52. The line now ranges from 1/32 to 1/2 in. in diameter and from 1/8 to 4 in. in length. Non-standard diameters and lengths can be specified on quantity order. The pin is made of stainless steel, plain or heat treated, in the new small sizes.

Strip steel is rolled into coil shape to provide radial spring action when it is compressed several thousandths on the diameter by driving or pressing.

If you write maker identify as IEN - 1309

CONTROL . . Orifice actuated meter regulates air flow to foundry cupola

Source: FOXBORO CO.
42 Neponset Ave., Foxboro, Mass.

For correct combustion

Air pulsation, resulting from the operation of a positive blower, can be eliminated by means of a new compensator in connection with the company's Model 40 Air Weight controller for air supply to a foundry cupola. The compensator adjusts the controller action to correct the weight of air flow, for variations in atmospheric temperature and pressure, while a snubbing device damps out any throbbing affect in the air stream.

The control employs the company's standard Stabilog air operated proportioning controller with actuation by an orifice in the blast line. It operates a diaphragm type valve directly in the blast line, when used in connection with a centrifugal blower. It opens and closes a vent valve to release air from the blast line in excess of requirements when a positive blower is employed.

Identify as IEN - 1310

Simple addition of a little pipe on top of a filling spout solved a mean problem of filling aluminum sulfate into bags for export. Formerly air could not get out of the tight bags and the filling job was a tough one. The idea won a $500 check to a machine operator for American Cyanamid.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

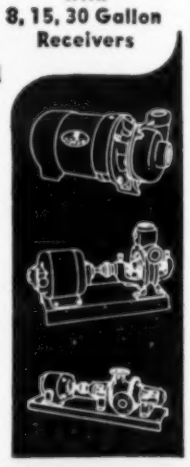
If you write maker identify as IEN - 1311

APCO *Packaged* CONDENSATION RETURN UNITS

for the SMALL LOW PRESSURE JOBS

10 to 40 lbs. with 8, 15, 30 Gallon Receivers

Packaged Duplex Condensation Return Unit with No. 4 Series Apco Pumps.



Start saving valuable heat units with APCO Square Tank Units. Built to meet demand for a smaller unit with the superb performance of our larger units. Remember, the Pumps are Apcos. No Vapor Binding — Special Provision for Expansion and Contraction — No Frictional Wear within pump. Thus, ECONOMY.

Write for Bulletin 113-ST

DISTRIBUTORS IN PRINCIPAL CITIES

AURORA Always PUMPS

AURORA PUMP COMPANY

52 LOUCKS STREET • AURORA, ILLINOIS

If you write maker identify as IEN - 1312

since Transall took over

Pre-Lubricated

Belt Conveyor Idlers

No Lubrication Labor
No Lubricant Cost

TRANSALL INC.

Manufacturers of a complete line of Belt Conveyor Equipment

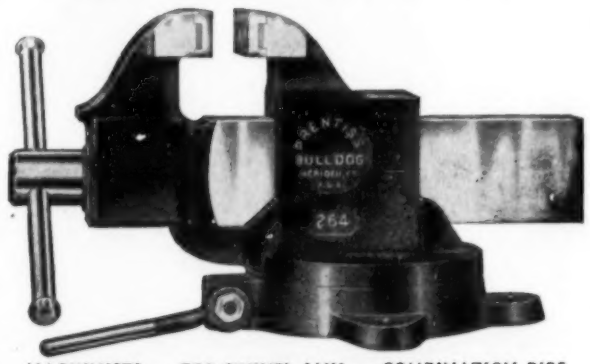
117 North 11th St. Birmingham 4, Ala.

If you write maker identify as IEN - 1313

PRENTISS

"BULL DOG" VISES

Backed by 80 years of time-proven acceptance by industry.



MACHINISTS — TOP SWIVEL JAW — COMBINATION PIPE HINGE PIPE — WOODCUTTERS — UTILITY

Renewable steel jaws that cannot work loose, swivel base with a positive lock plus other features give you vises that will stand the most severe tests. Send for THE NEW PRENTISS CATALOGUE TODAY.

See Us at Booth 737, Triple Mill Supply Convention

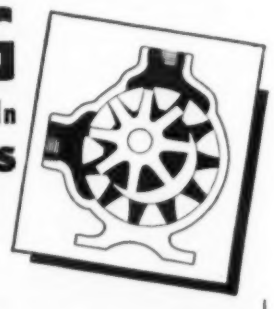
PRENTISS VISE DIVISION
OF THE CHARLES PARKER CO., MERIDEN, CONN., U. S. A.

If you write maker identify as IEN - 1314

NOT A SIDE-LINE

VIKING

Builds The Full Line In ROTARY PUMPS



The designing, testing, manufacturing and applying of Viking Rotary pumps is VIKING'S one and only job.

What does this actually mean to you? It means that the energy, the development, and the output are at no time devoted to some other product.

The result is a superior rotary pump in a greater range of sizes and types to really fit *your* needs better.

VIKING AN HONORED NAME IN PUMPING

Investigate the *complete* Rotary Pump line—VIKING. Start with bulletin 53SF.

See Our Catalog In SWEETS

Viking PUMP COMPANY
Cedar Falls, Iowa

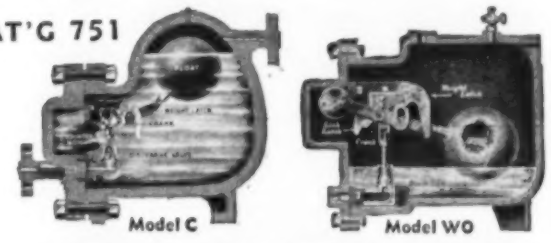
If you write maker identify as IEN - 1315

NICHOLSON W. O. TRAPS

NEVER NEED PRIME

Nicholson weight-operated traps, under no condition, leak live steam. This prevents the costly loss of steam occuring when bucket traps lose their prime as a result of drying up in super-heat or flashing at sudden pressure drops. Under these conditions Nicholson weight-operated traps still hold tight because they do not depend on buoyancy of float to raise valve. Widely used for steam purifiers, super-heated lines, headers, separators, heaters, dry kilns, pipe coils, turbine throttle valve drips, stop and check valves, etc. Also for air and gasoline.

CAT'G 751



Model C Model WO

3 TYPES—pressures to 200, 500 and 1500 lbs.

W. H. NICHOLSON & CO.

TRAPS · VALVES · FLOATS

159 Oregon St., Wilkes-Barre, Pa.

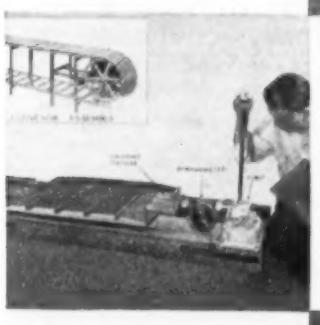
If you write maker identify as IEN - 1316

to measure *tension, traction or weight* **do it accurately with**

DILLON DYNAMOMETERS!

COST IS NEGLIGIBLE

Rugged, compact, accurate; DILLON DYNAMOMETERS are simple and easy to handle and read.



From simple weighing to intricate torque tests, the DILLON DYNAMOMETER is doing the job with the same unfailing accuracy, versatility and rugged dependability which has made it a "by-word" in industry throughout the world. Your own plant becomes your testing laboratory with a DILLON DYNAMOMETER.

Built to take years of hard, daily use, the DILLON will pay for itself many times over.

Light: 8 lbs. 4 ozs. (5" dial model.)

Compact: 8¼" long, 6¼" high, 3" thick.

Accurate: Calibrated in Certified Laboratory Testing Machine.

The DILLON DYNAMOMETER is made in 9 different capacities: 0-500 lbs. up to 0-50,000 lbs. All have max. hand, shackles, safety glass crystal. There are thousands in use today by leading companies all over the world. Write for profusely illustrated Bulletin D-1.

W. C. DILLON & CO., INC.

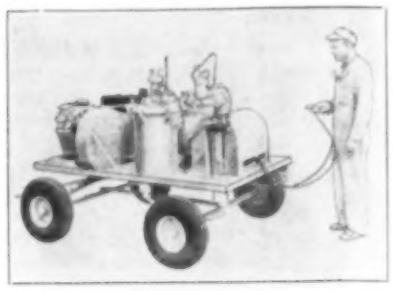
Precision Instruments for Precision Testing

14620K Keswick St., Van Nuys (Suburb of Los Angeles), Calif.

If you write maker identify as IEN - 1318

PAINTING . . Mobile equipment carries paint, compressor and spraygun

Source: UNIVERSAL MFG. & SALES CO.
5209-13 Pacific Blvd., Huntington Park, Calif.



To paint anywhere

Paint is carried in two 10-gal. tanks in standard design of this new Model N4-432 equipment. The tanks are assembled on a trailer truck in connection with a 35-cfm. compressor driven by an 8-hp. air-cooled gasoline engine. The equipment includes 100-ft. air and fluid hoses wound on a reel and a spray paint gun. The engine is equipped with a starter, battery and generator. Accessory apparatus includes a compressor unloader, pneumatic motor paint agitators, compressed air drier and hose line cleaner.

If you write maker identify as IEN - 1319

BELT DRESSING . . Liquid material acts at once when sprayed on a belt

Source: ALEXANDER BROTHERS BELTING CO.
404-8 N. 3rd St., Philadelphia 23, Pa.

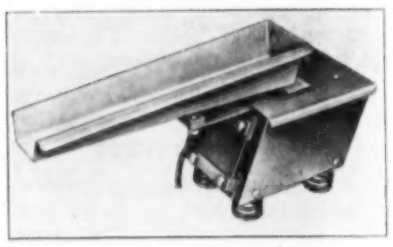
Press to spray

Packaging is in a pressurized 12-oz. container for the company's new spray type liquid Belt Lube. The liquid is released in a fine mist when the operator presses a button on the container. Application can be made on rubber, leather or fabric transmission belts to maintain flexibility and stop slipping without gumming or glazing. Single cans and cases of 12 cans are available.

If you write maker identify as IEN - 1320

FEEDING . . Vibrating trough unit for bulk materials to 500 lb. per hour

Source: SYNTRON CO.
410 Lexington Ave., Homer City, Pa.



Ready to install

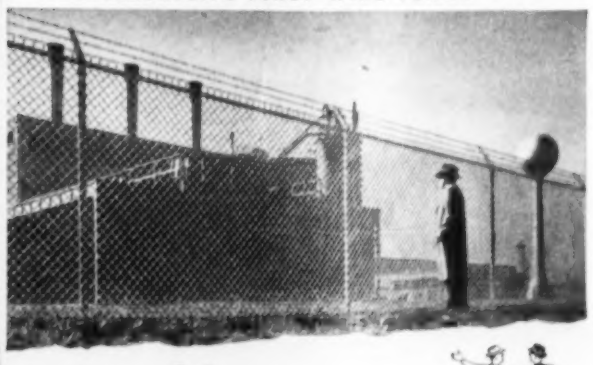
New size has been added to the company's line of electromagnetic vibrating feeders. It is known as Model F-00. It measures 14 in. in length and stands 7¼ in. in height. Weight is 14 pounds. Rate of material flow is controlled by adjusting a rheostat. Adjustment can be made from a thin trickle to full capacity action at about 500 lb. per hour.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1321

PAGE FENCE *Since 1883*

• AMERICA'S FIRST WIRE FENCE •

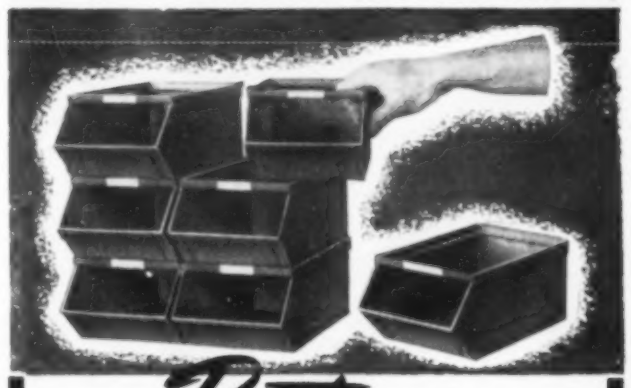


Could you **blame** yourself if failure to safeguard property resulted in loss? After all, isn't property protection a responsibility of all management? Security is a job for Page Chain Link Fence, available in heavily galvanized Copper-Bearing Steel, rust-immune Stainless Steel or corrosion-resisting Aluminum. But PAGE means more than a quality product. It is a complete fence service, performed by more than 100 firms having technical training and fence erecting know-how, and conveniently located throughout the country. For illustrated data and name of firm nearest you—

***Write** to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.*

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

If you write maker identify as IEN - 1322



Parts...

★ **Where You Want Them . . .**

★ **When You Want Them**

You'll save time, space and labor handling parts and material when you use these patented STACKBINS. STACKBINS keep parts instantly accessible—eliminate waste hand motions—stack compactly to form units of exactly the right shape and capacity—make order filling or assembly work faster, easier, more efficient. Heavy steel, all-welded construction. Sizes from 3½" x 6" x 3¼" to 15" x 24" x 11". Prices from $.65 to $2.75.

Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main Street, Pawtucket, R. I.

STACKBIN SYSTEM

"Stacked and Still Accessible"

If you write maker identify as IEN - 1323

Over Half of America's Top Companies Use "Speed Sweep"

THE BRUSH WITH THE STEEL BACK

BECAUSE it sweeps faster and cleaner, and outlasts ordinary brushes 3 to 1, Speed Sweep has become the No. 1 sweeping tool of American Industry — used by over 50,000 firms. Whether you use a few or a lot of brushes, you'll find it pays to switch to Speed Sweep.

Write for styles, sizes and prices.

MILWAUKEE DUSTLESS BRUSH CO.

MILWAUKEE 3, WISCONSIN

If you write maker identify as IEN - 1324

FROM THE "JENNY" OF 1914 — TO THE "JET" OF TODAY...

FRASSE aircraft steels have played an important part in the growth of the aircraft industry. Through this close association, Frasse inventories of aircraft steels have kept pace with the industry's expanding requirements.

Current Frasse stocks include aircraft quality bars, sheets and tubing — in a complete range of sizes — all immediately available for direct shipment to your plant. Chemical certification is furnished for each shipment and Government inspection is available when required.

Government "Specs" covering aircraft steels are included in Frasse Data Chart Sec. D, No. 1. You'll find it a handy working tool. For a free copy simply write or call your nearest Frasse office.

Call FRASSE 1st for **AIRCRAFT STEELS**

Peter A. FRASSE and Co., Inc.

17 Grand Street, New York 13, N. Y.

Lyndhurst • Philadelphia • Buffalo • Syracuse

If you write maker identify as IEN - 1325

Easily machined for MANY PARTS

JOHNSON UNIVERSAL BRONZE

IN addition to free cutting properties, Johnson UNIVERSAL BRONZE comes to you completely finished, ID, OD and ends. You can see how this saves you time and money. There are over 400 sizes available from your Johnson Distributor. Applications include gears, rollers, sheaves, trolley wheels, tips for air tools, pipe fittings, washers, thrust plates, bushings and bearings. WRITE for catalog showing sizes in stock or consult your local Johnson Distributor.

JOHNSON BRONZE COMPANY
476 S. Mill St., New Castle, Pa.

JOHNSON JB BEARINGS
Sleeve-Type

Sleeve Bearing Headquarters Since 1901

If you write maker identify as IEN - 1326

WEBB "TOWVEYOR"

FLOOR TYPE TOW CONVEYOR USES STANDARD SHOP TRUCKS

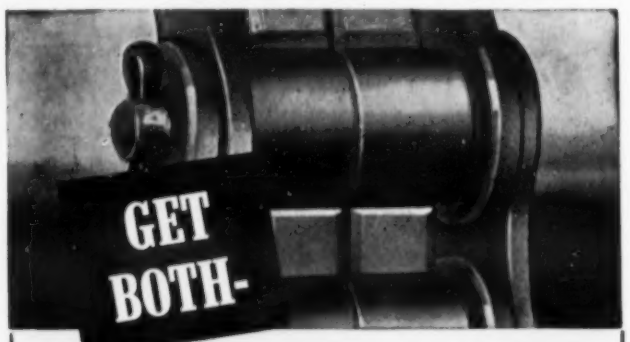
FAST—operator drops pin in slot, walks away . . . no loading time lost. **CLEAR FLOOR**—no obstacles . . . truck over it easily. **FLEXIBLE**—can be routed as required . . . trucks disengaged anywhere along route.

The Webb Towveyor is a new type conveyor with chain running in a slot below the floor. Standard shop or warehouse trucks, either 2 or 4-wheel, are used. Simple towing pin mechanism is bolted or welded to front end. Trucks may be engaged at any point . . . disengaged anywhere for loading or unloading.

Slashes warehouse handling costs—write for "Towveyor" folder, or recommendations.

CONVEYOR ENGINEERS AND MANUFACTURERS
JERVIS B. WEBB COMPANY
8915 ALPINE AVE DETROIT 4, MICH
OFFICES IN PRINCIPAL CITIES
FACTORIES IN DETROIT . . . LOS ANGELES . . . HAMILTON, ONT.

If you write maker identify as IEN - 1327



GET BOTH-

top performance . . . economy with "RC" Flexible Couplings

"RC" Coupling—in 30 sizes, 3/8 to 12 in. bore.

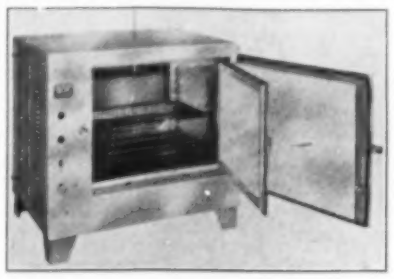
Only the Link-Belt "RC" Flexible Coupling gives you single chain simplicity plus divided rollers. Divided rollers equalize the load . . . maintain proper balance at high speeds . . . adjust to reasonable misalignment and end float. There's a Link-Belt Roller Chain Coupling for ratings from fractional to 1000 hp. For complete information, write for "RC" Coupling Folder 2363.

LINK-BELT
"RC" FLEXIBLE COUPLINGS
LINK-BELT COMPANY
Dept. 21, 307 N. Michigan Ave., Chicago 1, Ill.
12,797

If you write maker identify as IEN - 1328

TESTING . . Atmosphere chamber to vary test temperature and humidity

Source: BLUE M ELECTRIC CO.
304-10 W. 69th St., Chicago 21, Ill.



Meets standard test requirements

Relative humidity can be held between 90 and 100 per cent in a temperature range from 4 to 70 deg. C. in this new atmosphere chamber. It employs a counterflow baffle to maintain direct and efficient atmosphere circulation while conserving cooling water when testing at temperatures below ambient. A thermostat holds the set temperature within 0.5 deg. C. Current input is 450 to 1,250 watts.

Four sizes provide working area measuring 14 to 37 in. in width, 12 to 17 in. in depth and 14 to 25 in. in height. Corresponding outside dimensions range from 26½ to 49 in. in width, 23¼ to 27 in. in depth and 29 to 40 in. in height. The interior and exterior are made of stainless steel. Input voltage can be specified to meet requirements.

If you write maker identify as IEN - 1329

PRINTING . . Spirit type duplicator, hand operated for letter size sheets

Source: A. B. DICK CO.
5702 W. Touhy Ave., Chicago 31, Ill.

Five printing colors

Model 220 is the first of a new line of spirit type duplicating equipment for plant and office use. Th new machine employs automatic feed, hand operation and features a gravity air lock in the moistening mechanism combined with a paper retention device for positive feed, low fluid consumption and minimum paper waste. Metallic decalcomanias identify the controls and provide condensed operating instructions for untrained operators. The company is also prepared to supply master paper, master units, spirit fluid and paper.

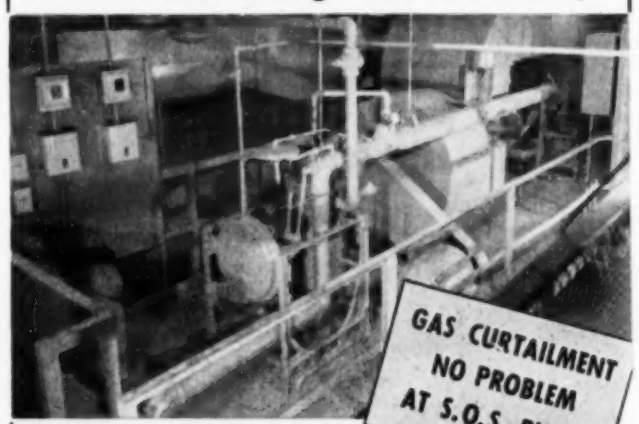
Identify as IEN - 1330

Pittsburgh dealer for Clark Equipment Company provided the prizes for a truck driving obstacle race put on by Monsanto Chemical Company at a recent plant picnic. The drivers operated their Clark trucks over an established course, picking up and depositing loads and traveling between and around many obstructions. A part of the contest required the drivers to judge safe and unsafe loads and pick them up or pass them.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1331

Did You Have Enough GAS this Winter?



THIS OVEN DESIGNED FOR GAS . . . BUT IT'S FIRED WITH OIL VAPOFIER

The S.O.S. Company, in Chicago, has insured production against losses due to seasonal gas curtailment by installing Vapofier as gas standby. Change-over to and from gas is made without loss of flame at the burners in a matter of seconds. The same piping, burners, automatic controls and safety devices are utilized.

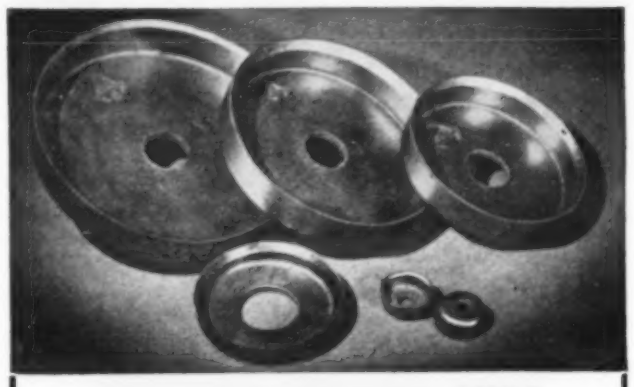
Capacities from 70,000 to 4,000,000 B.T.U.'s per hour

Should your processing be annealing, galvanizing, heat treating, glass manufacturing, industrial drying, paint, core or bread baking, there's a Vapofier to fit your needs.

Do away with Gas Shortages this winter. Send for FREE booklet "Make Your Own Gas with Vapofier."

VAPOFIER CORP., 10326 S. Throop St., Chicago 43, Ill.

If you write maker identify as IEN - 1332



GARLOCK MOLDED CUPS

For pump pistons, hydraulic service and pneumatic equipment

BITAN* Leather Cups for use against cold and hot water, oils, gases, and solvents. Synthetic-rubber-impregnated for hot oil service up to 250°F.
Rubber and Synthetic Rubber Cups with fabric insertion for use against air at high or low pressures, against oils, and on heavy duty hydraulic equipment.
Cups for Pump Pistons available for standard cylinder sizes.

New Garlock Molded Cups folder describes in detail our complete line of cups. Write for your copy today!

*Registered Trademark

THE GARLOCK PACKING CO.
PALMYRA, NEW YORK
In Canada: The Garlock Packing Company of Canada Ltd., Toronto, Ont.

GARLOCK

If you write maker identify as IEN - 1333

GREATER PIPE LINE MOTION CONTROL IN A MORE COMPACT, LESS COSTLY EXPANSION JOINT!

Continuing research and development at Flexonics Corporation now make it possible for Flexon Expansion Joints to offer three basic advantages.

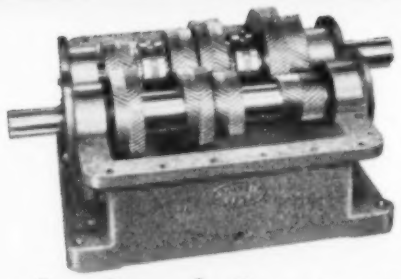
1. The face-to-face (over-all) dimension of a joint to handle a given amount of expansion has been reduced.
2. Lower expansion joint cost to handle a given amount of motion.
3. Maximum of motion commensurate with optimum life.

Complete specifications are given in the new Flexon Expansion Joint Bulletin. Write for your copy, today.

CHICAGO METAL HOSE
DIV. FLEXONICS CORPORATION
1333 S. Third Avenue, Maywood, Illinois
Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

If you write maker identify as IEN - 1334

Philadelphia CHANGE-SPEED UNIT



Standardized Construction

—to give you Greatest Economy

Based on long experience in building Change-Speed Units to individual specifications, Philadelphia has developed a line of *standardized* units. This cuts the high cost and delayed deliveries of former methods.

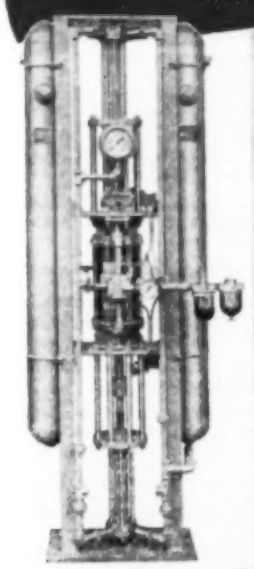
Units are positive geared drives using herringbone gears throughout. No belts to wear or slip. Ratios are definite for speed increasing or reduction or in combination. Wide range of horsepowers in 2, 3 and 4 speed units.

Write for catalog giving full details.

PHILADELPHIA GEAR WORKS, Inc.
ERIE AVENUE AND G STREET • PHILADELPHIA 34, PA.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON • LYNCHBURG, VA.

If you write maker identify as IEN - 1335

Ledeen PUMPS



HIGH PRESSURE OIL from LOW PRESSURE AIR

Ledeen Heavy Duty Pumps and Power Units are built for operation of clamps, valve actuators, forming or drawing presses, safety installations, high pressure testing and other hydraulic circuits requiring adjustable pressure and volume and long pressure-holding cycles, without overheating the oil. Built as a complete package power unit, ready for easy installation, requiring connections only to incoming air line and outgoing hydraulic lines. Available in horizontal construction for minimum head room, and vertical construction for minimum floor space. Simple to install. Inexpensive to operate.

Write for Bulletin 4000

Ledeen Mfg. Co.
1602 San Pedro
Los Angeles 15, Calif.

VALVES • CYLINDERS
AIR-HYDRAULIC
PUMPS & BOOSTERS
VALVE ACTUATORS
AIR HOISTS

If you write maker identify as IEN - 1336

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE — LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

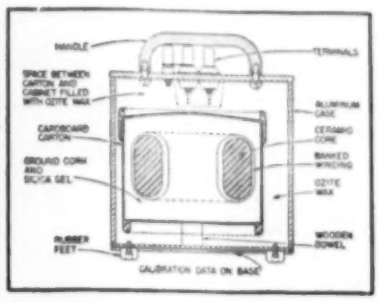
Be sure to write for illustrated literature and prices

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

If you write maker identify as IEN - 1338

TESTING . . Precision inductor for standardizing and measurement

Source: GENERAL RADIO CO.
273-77 Massachusetts Ave., Cambridge 39, Mass.



Insensitive to electrical environment

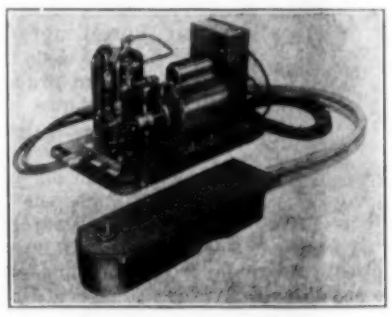
Type 1482 is improved construction of the company's previously developed Type-106 standard inductor. The new unit takes the place of the previous one and is available in 1-2-5 unit values. Inductance range is 100 uh. to 1 h. Units rating 2 h., 5 h. and 10 h. are available on special order. Maximum input power is 3 watts for a 20-deg. C. rise. Dimensions are 6½ by 6½ by 8 inches. Weight is 11½ pounds.

Construction employs a symmetrical round toroidal coil on a ceramic core having an elliptical cross section. The completed coil is packed in granulated cork in a cylindrical cardboard carton with a small amount of silica gel for dehydration. The carton is supported on three wood dowels and is cast in place with a potting compound in the aluminum housing for hermetically sealed assembly. The leads are brought out to terminals. List price is from $48 to $60.

If you write maker identify as IEN - 1339

DOOR OPERATOR . . Hydraulic unit applies on single acting swing door

Source: REPUBLIC INDUSTRIES INC.
4438-42 N. Knox Ave., Chicago 30, Ill.



Ask for Bulletin I-52

A rotating head mounts beneath a single acting swing door, is operated hydraulically by a motor-driven power unit in this new Dor-O-Matic Dor-Man operator. The action is controlled by a mat type switch that lies flat on the floor beneath the door and extends on both sides. The door opens away from the individual who wishes to move through the opening. It will not open if anyone is standing on the mat on the opposite side. The equipment is intended for single way opening and is used in pairs for incoming and outgoing doors in a two-way passage.

The swing arc is through 90 degrees. It includes fast and then slow closing when the door has reached a position about 10 degrees from the jamb. The speeds are adjustable at the time of installation. Operation is noiseless. Application can be made, without major alteration, on glass, metal or wood doors with standard arms and pivots. No reinforcement or alteration to the door or the jamb is required.

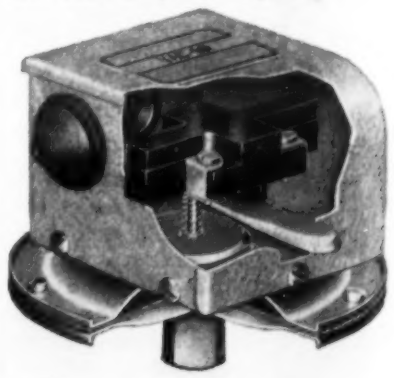
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1340

A PAID NEWS ADVERTISEMENT BY JAY-CON ASSOCIATES

VACUUM SWITCH . . New Industrial Type Introduced by Jay-Con

Low Cost, Simple To Operate



An automatic vacuum switch that prevents "dry operation" of electric or gasoline powered pumps, drills, and other equipment operating on limited liquid transfer or vacuum applications, has been developed by Jay-Con Associates, Minneapolis, Minnesota.

The Vac-On Vacuum Switch appears to be the answer to a long felt industrial need. Operating on a spring loaded, rubber diaphragm principle, the new vacuum switch mounts on the suction line and is wired into power supply or spark system. When suction falls below a predetermined negative pressure, the switch automatically cuts off the power source. Silver contact points are utilized for heavy duty service and a small hand lever allows manual re-start.

The Vac-On Vacuum Switch, Model 35-2, will operate electric motors up to 2 H.P. on AC or ½ H.P. on DC current. Model 35-5 is effective on any gasoline-powered engine and shorts out the spark plug in event of liquid or vacuum supply failure.

For further information including prices, write **Dept. 201**, Jay-Con Associates, 404 Washington Ave., Minneapolis 1, Minnesota.

If you write maker identify as IEN - 1341

MACHINE DESIGNERS!

GET THE FULL STORY ON HANNIFIN'S

NEW *Pilot-Master* Air Control Valves!

HERE'S WHY MAINTENANCE MEN PREFER THEM...

FEWER VALVES TO STOCK
Use same valve 2-way or 3-way, normally open or normally closed.

FEWER PARTS TO STOCK
Unique cartridge construction makes "insides" easily replaceable.

INDUSTRIAL SOLENOIDS
Long-lasting, easy to change coils to any standard voltage.

¼", ⅜", ½", ¾", 1", 1¼" Sizes; Pressures to 150 p.s.i.
Write for Bulletin 231 and get the complete story!

HANNIFIN

Hannifin Corporation • 1107 S. Kilbourn Ave. • Chicago 24, Ill.
Air and Hydraulic Cylinders • Presses • Air Control Valves

If you write maker identify as IEN - 1342

NEW CLEANER Does the Work of 3

IDEAL BLO-R-VAC

A "Tank-Type" Cleaner
A "Hand-Type" Cleaner
A Blower-Sprayer
...All In One Unit!

More for your cleaner dollar with this ALL-NEW, low-cost, multi-purpose unit! As a "tank-type" cleaner it vacuums lint, dirt, dust, scrap metal and *picks up water*. Has strong dust-tight bag and 12-gallon steel tank. Power unit can be removed in a jiffy for use as a blower, a sprayer . . . or a hand-type vacuum cleaner! Full selection of attachments available. Built to highest *industrial* standards. Two models —1-1/3 H.P. and 2/3 H.P.

TRY IT FREE

IDEAL INDUSTRIES, Inc.
1108 Park Ave.
Sycamore, Illinois

Arrange FREE DEMONSTRATION of your new BLO-R-VAC in our plant.

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE____

SOLD THROUGH AMERICA'S LEADING DISTRIBUTORS

If you write maker identify as IEN - 1343

Take the "JERKS" out

Are you tearing your hair over—
Smoking, "killing" motors? Breaking drives? Overloaded circuits?
Lugging, stalling engines? Damaged equipment? Excessive maintenance?
Then it's time to take the "jerks" out with Twin Disc's power-smoothing HYDRO-SHEAVE® Drive. Call your Twin Disc Hydraulic Dealer *today*—ask for Bulletin 145-B.

HYDRO-SHEAVE Drive—The Hydraulic Coupling unit for motors or engines, ¼ to 50 hp.

TWIN DISC
CLUTCHES AND HYDRAULIC DRIVES

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • Hydraulic Division, Rockford, Illinois
BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TULSA

If you write maker identify as **IEN - 1344**

BECKER CO_2-POWERED SPRAY GUN

NO COMPRESSOR • NO HOSES
NO ELECTRICAL OUTLETS

USE IT ANYWHERE!

Here's a completely portable sprayer especially designed for the hundreds of industrial uses where costly, cumbersome compressor-type spraying is unnecessary. Sprays paints, oils, varnishes, water-proofing, fire-proofing, etc. Powerful CO_2 cartridge sprays up to one 21 oz. containerful at high pressure. Light in weight for easier spraying. Has brass and stainless inserts, heavy-gauge steel container, comfortable knurled handle grip, and cast aluminum head.

SEE YOUR DISTRIBUTOR or order direct postpaid. Extra CO_2 cartridges at your dealer's or 10 for $1 postpaid.

SULLIVAN-BECKER CO., Dept. 193-B, Kenosha, Wis.

If you write maker identify as **IEN - 1345**

The DRY SCRUBBER with the *Self-Sharpening* BRUSH FEATURE

Just flip the switch! That reverses the motion of the brushes of the *Finnell* Dry Scrubber and re-sharpens them automatically. Eliminates the need for frequent changing of brushes by hand in order to maintain a good cutting edge. This heavy duty *Finnell* cleans grease-caked floors in about *one-tenth* the man-hour time required when hand-spudding, and is far more thorough. Floating brush rings enable the two powerful scarifying brushes to get into indentations and grooves that rigid coupling brushes pass over and miss. The machine is adaptable to wet scrubbing, steel-wooling, waxing, and polishing. For free floor survey, consultation, or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 2602 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC. *Originators of Power Scrubbing and Polishing Machines* — 50 FINNELL — BRANCHES IN ALL PRINCIPAL CITIES

If you write maker identify as **IEN - 1346**

Keep Lubrication Fittings Clean

Here's a tip that will help cut maintenance costs and prolong bearing life . . . use these inexpensive flexible plastic caps on your lubrication fittings. They'll keep the fittings free from the dirt and grit that's often forced into the bearings when the grease gun is applied. The caps can be slipped on and off with ease — and once on, won't shake loose. They're also unaffected by oil, grease or water.

Sizes for Hydraulic, Button Head or 1/8" Dot Type Fittings. Order a supply.

BULLETIN P-5206 has details. Ask for a copy.

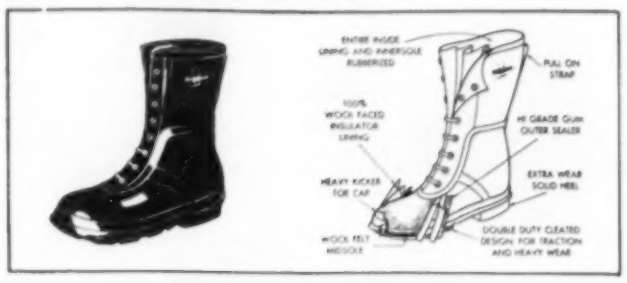
THE S.S. White PLASTICS DIVISION
DENTAL MFG. CO. Dept. NP, 10 East 40th St. NEW YORK 16, N. Y.

WESTERN DISTRICT OFFICE: Times Building, Long Beach, California

If you write maker identify as **IEN - 1347**

PROTECTING . . Waterproof boot for workers exposed to cold weather

Source: TECHNO EFFICIENCY COUNCIL
3 Hanson Place, Brooklyn 17, N. Y.



Comfortable, warm and rugged

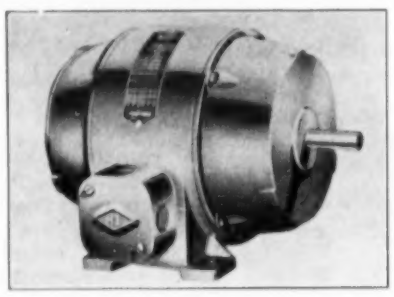
Thermoboot trade names a new design of footwear originally developed for use by the Armed Forces for cold locations. It employs wool and dead air space to insulate. It provides protection against frost bite and is worn with one medium weight sock. The boot is washable inside and out. The soles are cleated for traction. The toes are "kicker" type.

Three types in the line are available in sizes ranging from No. 5 to No. 14. Type F-10 is for temperatures from 10 deg. below zero to 60 deg. above. Type SZ-40 is for temperatures starting at 40 deg. below zero. Type HL-5 is a low temperature hip length wader.

If you write maker identify as **IEN - 1348**

MOTORS . . Multiple speed ac. with ratings from ½ to 150 hp.

Source: REULAND ELECTRIC CO.
Westminster & W. Mission, Alhambra, Calif.



Typical unit in line

The company announces availability of its new line of Multi-Speed motors in 2, 3 or 4 speeds in either constant torque, variable torque or constant hp. types. The 2-speed units are provided with one or two windings, the 3 and 4-speed motors with two windings. Each unit can be supplied in standard, totally enclosed, splash proof or explosion proof assembly and can be equipped with a geared reducing head and with a magnetic brake.

Identify as **IEN - 1349**

Disposable paper sheet, highly absorbent on one face and waterproof on the other, makes its initial bow as replacement for rubber sheeting to protect bed mattresses. Lag Safe Mat is the trade name. Brown Bridge Mills is the maker. The sheet is odorless, does not rustle, stays in place, absorbs perspiration, does not cause skin rash. It is made in rolls 300 ft. in length by 3 ft. in width. It also is in sheets from 9 by 14 in. to 36 by 43 inches. Goodrich Geon latex is the waterproofing material employed in the new paper.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1350**

Valuable Information

FREE to Factory Executives, Engineers and Maintenance Dept. Officials

68 Useful Pages

New Manual shows how to properly install and service Clarage fans, blowers and air conditioning units . . . valuable information adaptable to almost any type of fan job. Sent without charge to key men who qualify by writing us on their company's letterhead.

YOU CAN RELY ON **CLARAGE**

CLARAGE FAN COMPANY, Kalamazoo, Mich.
Sales, Engineering Offices in All Principal Cities

If you write maker identify as **IEN - 1351**

HOW TO CONTROL GAGES AND GAGE INSPECTION

New illustrated booklet describes and shows suggested McCaskey procedures and forms designed to provide:

- Reinspection date follow-up;
- Location and condition of each gage and measuring instrument, loaned or in cribs;
- Gage and Instrument History record;
- Central clearance record of each employee's gage and instruments;
- Tool and gage inspection report;
- Gage tag, conditional release tag for tools (fixtures), and faulty tool and gage tag;
- Instrument and gage withdrawal order, etc., etc.;
- . . . all designed for complete control with speed, accuracy and minimum clerical work.

Close control of your gages, instruments and fixtures and their inspection will reduce spoiled work and rework costs . . . and improve your product quality. Procedure approved for government contract requirements.

Write today for McCaskey Gage and Tool Inspection Control—Bulletin A-512 IEN — giving you all the facts.

THE McCASKEY REGISTER COMPANY • ALLIANCE, OHIO

McCASKEY INDUSTRIAL CONTROLS
PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

If you write maker identify as **IEN - 1352**

FREE! The most popular Beckman pH Booklet ever published!

"WHAT EVERY EXECUTIVE SHOULD KNOW ABOUT pH"

. . . a short, informative outline of pH—*what* it is, *how* it's used, *where* it is making vital savings in modern industrial applications of all types.

- A top executive in one of the nation's leading corporations writes: *"An excellent job of reducing a complex subject to easily-understood fundamentals. May we reprint it for use in training our men?"*
- Another writes . . . *"This is the simplest, most easily-understood explanation of pH I have ever seen. May we have extra copies for plant educational work?"*

Wherever there's water, there's pH. Perhaps this booklet can help you cut production costs, improve uniformity, reduce waste through Beckman pH Control. A copy will gladly be sent free on request. Ask for Bulletin 1-5!

BECKMAN INSTRUMENTS, INC.
SOUTH PASADENA 1, CALIFORNIA

BECKMAN INSTRUMENTS control modern industries

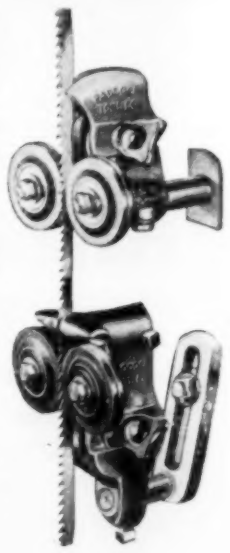
Factory Service Branches:
New York—Chicago—Los Angeles

Beckman Instruments include: pH Meters and Electrodes — Spectrophotometers — Radioactivity Meters — Special Instruments

MORE SPEED — MORE SUPPORT

CUT COST OF SAW BLADE REPLACEMENTS

SPEED UP PRODUCTION

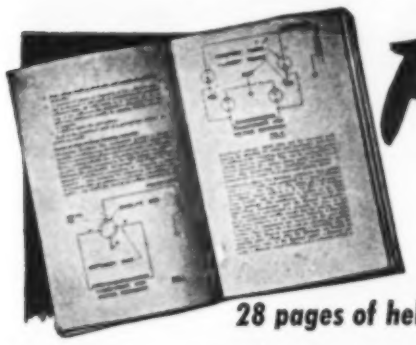


• Paddock Ball-Bearing Band Saw Guides will more than pay for themselves in a very short time by (1) Saving on Blade Breakage, (2) Speeding up production, (3) Cutting any materials at any speed, and, (4) Protecting workmen. The whole secret of Paddock Efficiency: Interchangeable ball-bearing wheels running with blade give strong yet friction-free support. They make any band-saw, old or new, work better! Write for circular and prices.

PADDOCK TOOL CO.
1418 Walnut Street Kansas City 6, Mo.
Guide Makers Since 1920

Paddock BALL-BEARING **BAND SAW GUIDES**

If you write maker identify as **IEN - 1354**



Free!

FROM WESTERN PRECIPITATION

28 pages of helpful facts about

COTTRELL ELECTRICAL PRECIPITATORS

THIS HELPFUL 28 PAGE BOOKLET — Prepared by Western Precipitation Corporation, *pioneers in the commercial application of* COTTRELL *Precipitators* — summarizes and illustrates many of the basic facts you should know about COTTRELL Precipitators for use in recovering industrial dusts, mists, fogs, fumes, fly ash and other suspensions from gases. Written particularly to answer questions of design engineers, plant engineers and others interested in COTTRELL Precipitators, this booklet outlines the various types available, how they operate, principal types of electrical systems and rectifiers, shell construction, other helpful data.

As long as the supply lasts, a free copy will be sent on request to our nearest office. Write for Bulletin No. C-103 today!

WESTERN Precipitation CORPORATION

ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA

CHRYSLER BLDG., NEW YORK 17 • 1 N. La SALLE ST. BLDG., CHICAGO 2

1429 PEACHTREE ST. N.E., ATLANTA 5 • HOBART BLDG., SAN FRANCISCO 4

PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as **IEN - 1355**

Stop annoying Blink...Blink...Blink

WITH WATCH DOG NO-BLINK FLUORESCENT STARTERS

Annoying fluorescent blink and excessive maintenance go hand in hand. Here's what Watch Dog* starters do about it.

- Watch Dog starters *stop blinking* by automatically turning off failing fluorescent lamps.
- A Watch Dog starter *keeps the lamp off* until the red reset button is pushed when new lamp is installed. No recurrent blinking every time lights are turned on.
- Watch Dogs *outlast* ordinary starters—by as much as 10 to 1. Ballasts last longer, too.

You can stop blinking—cut starter replacement costs—cut ballast replacement costs—by changing to General Electric Watch Dog no-blink starters now—and by specifying them when you next buy new fixtures. For a copy of folder **Q38-242,** write Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

**Registered Trade-mark General Electric Company*

LOOK FOR THIS TAG when you buy fluorescent fixtures. It's your guarantee that the fixture is equipped with G-E Watch Dog starters.

For all replacement needs—use the famous Watch Dog no-blink starter with the red reset button.

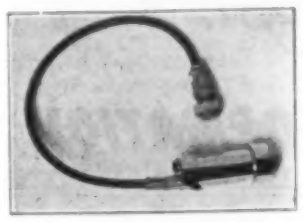
You can put your confidence in—

GENERAL ELECTRIC

If you write maker identify as **IEN - 1357**

TESTING . . Pressure transducer to actuate a meter or oscilloscope

Source: CONSOLIDATED ENGINEERING CORP.
302 N. Sierra Madre Villa, Pasadena 8, Calif.



$185 as shown

Type 4-301 is a new bridge type transducer for connection into a line in which rapid transient surges and high frequency pressure pulsations are to be checked. Pressure enters a fluid cylinder enclosed within a protecting housing. Minute dimensions in the cylinder, resulting from pressure change, act upon the arms of a bridge circuit wound upon the cylinder. The resulting bridge unbalance voltage is fed to a meter or oscilloscope.

Output is linear within 0.5 per cent of full scale. The pick-up, with its cable and connection plug, weighs 8 ounces. The housing is 1½ in. in diameter and is made of aluminum with plated protection. The first units in the line are designed for operation to 10 pounds. The company expects to expand this line to a maximum of 5,000 pounds.

If you write maker identify as **IEN - 1358**

PHOTOGRAPHING . . Plastic filter designed to replace lacquered gelatin

Source: OPTICAL PLASTICS CORP.
67-71 Southfield Ave., Stamford, Conn.

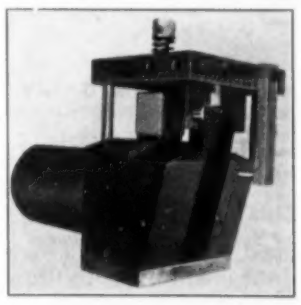
Thickness is 0.04 to 0.5 inch

Discs are cut to order or sheets are supplied measuring to 48 by 48 in. in the company's new CR-39 plastic, allyl diglycol carbonate. The material has been adopted by DuPont for use with its Varigram printing papers. The plastic is resistant to abrasion, to heat as high as 230 deg. F. and is inert to chemical attack. It will not craze or check. Color fidelity and reproductibility are assured by spectrophotometric inspection.

If you write maker identify as **IEN - 1359**

LATHE TOOLS . . Set-up gage to position tools in a turret lathe

Source: ARNOLD C. GAYNE ASSOCIATES
668-72 State St., Bridgeport 4, Conn.



Applies on machine

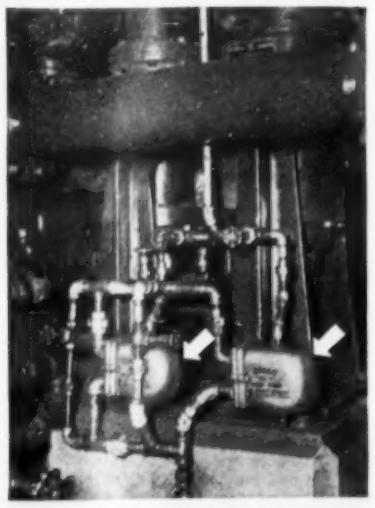
Micro Pin is a new tool set-up gage with which an initial set-up can be reproduced on individual tools in a lathe turret after a tool has been removed for sharpening or replacement.

One gage is applied on each tool holder, following initial set-up, and its positioning pins are adjusted to accurately match the bit. The gage is then removed and held in readiness for resetting when that tool has been removed and is to be replaced. Need for skill is practically eliminated. Resetting time is cut down to a few minutes per tool.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1360**

Remove Water from Compressed Air with Sarco Drain Traps



Water accumulating in compressed air systems must be drained off promptly to prevent damage to tools, marred paint surfaces or wetting of material to be cleaned—especially electrical machines.

Sarco Drain Traps should be installed at the aftercoolers (as in our illustration) on separators, at the receiver, and on low points in the lines, to remove all water as it accumulates.

These traps are available for pressures to 750 psi. Operate automatically without waste of air. Technical Bulletin No. 5 will help you get more work from your air compressors at less cost. Write for it to *Sarco Company, Inc., Empire State Bldg., New York 1, N. Y.*

Advt. 615

If you write maker identify as **IEN - 1361**

HEAVY DUTY INDUSTRIAL TRAILERS

Standard or Special CAPACITIES TO 60,000 lbs.

A-620 Low deck, 5th wheel steer trailer.

A-443 Die handling trailer.

A-520
Medium height, 5th wheel steer trailer.

MERCURY

In addition to the standard "Type A-310" castor steer trailer, MERCURY offers a complete line of heavy duty trailers in castor steer, fifth wheel steer or four wheel steer designs in capacities to 60,000 lbs. As the world's largest producer of industrial trailers, Mercury is well equipped to fill your specific requirements. For complete information request Bulletins A-100 and A-999.

MERCURY MANUFACTURING COMPANY
4132 S. Halsted Street, Chicago 9, Ill.

If you write maker identify as **IEN - 1362**

If you write maker identify as **IEN - 1363**

CUT IDENTIFICATION COSTS

with BRADY Printed Self-sticking ROLL TAPES

SAVE OPERATORS TIME • ELIMINATE WASTE MOTIONS • GET QUICK, POSITIVE IDENTIFICATION

Label parts, pieces, assemblies, materials, etc., with Brady Printed Tape. Sticks to any clean, dry surface without moistening. Applied by hand or automatic dispenser.

Any wording, numbers, letters, trademarks or symbols printed to your order on cellophane, acetate fibre, paper or cloth tapes to fit your job requirements.

Choose from a variety of standard colors, roll lengths and widths.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

DISTRIBUTED IN 125 PRINCIPAL CITIES

WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED ROLL TAPE · MASKS & STENCILS

MANUFACTURERS OF SELF-STICKING PRODUCTS

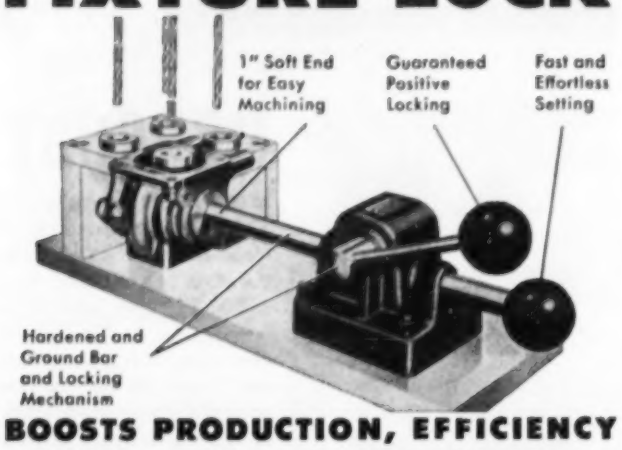
W.H. BRADY COMPANY

769 W. GLENDALE AVE., MILWAUKEE, WIS.

If you write maker identify as IEN - 1364

ANNOUNCING!

HEINRICH SCREWLESS *Grip-Master* FIXTURE LOCK

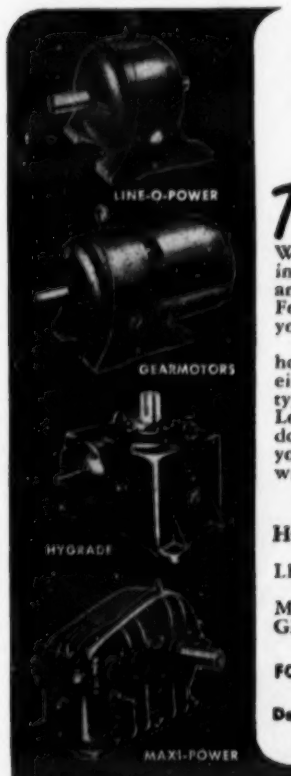


BOOSTS PRODUCTION, EFFICIENCY

Now—at the request of industry—we offer the new "Grip-Master" Screwless Fixture Lock, applicable for fixtures and jigs used in drilling, milling operations, etc. It incorporates the same high-quality locking mechanism proved by industrial use in the famous "Grip-Master" Screwless Drill Press Vise. Pays for itself quickly by increasing production, cutting tooling costs, etc. See your Dealer, or write for details.

NATIONAL MACHINE TOOL COMPANY
DEPT. 173-B • RACINE, WISCONSIN

If you write maker identify as IEN - 1365



BETTER POWER TRANSMISSION

Whenever you require a reduction in speed between any prime mover and a driven machine, there is a Foote Bros. drive exactly suited to your needs.

The Foote Bros. line includes horizontal and vertical drives in either helical gear or worm gear types. Also available are Foote Bros.-Louis Allis Gearmotors in single, double and triple reductions. Call your Foote Bros. representative or write for information.

SEND FOR BULLETINS

HGB { Horizontal Worm Drives / Vertical Worm Drives / Hytop Worm Drives
LPB Line-O-Power Straight Line Drives
MPB Maxi-Power Helical Drives
GMA Foote Bros.-Louis Allis Gearmotors

FOOTE BROS. GEAR AND MACHINE CORPORATION
Dept. IEN, 4545 S. Western Boulevard
Chicago 9, Illinois

FOOTE BROS.
Better Power Transmission Through Better Gears

If you write maker identify as IEN - 1366

NOW *Spray On* design layout ink

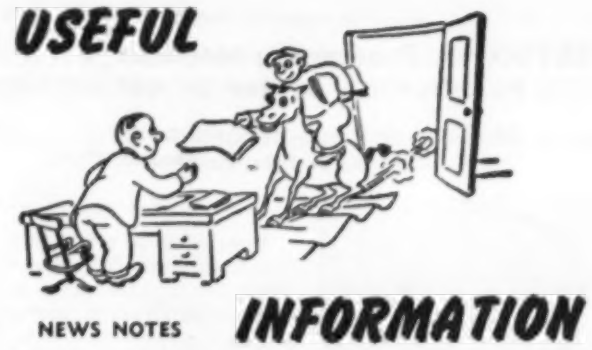
for METAL GLASS or WOOD

EASIER! FASTER!

• No brush, no waste, no mess, no stained hands. Aerosol-type can sprays on CROWN Design Layout Ink in fine mist that dries to excellent scribing surface in a minute. DARK BLUE. Also ideal for "OK" or "reject" inspection marking.

Order Today!
$1.59 Per 12-oz Can
15% discount in cases of 12. Additional discount for larger quantities. F.O.B. Sycamore, Illinois.

CROWN INDUSTRIAL PRODUCTS CO.
402 Borden Avenue, Sycamore, Ill.
Please ship at once:
.....(how many?) cans
.....(how many?) cases
CROWN Design Layout Ink.
Name.....
Company.....
Our Purchase Order No.....
Address.....
City.....Zone.....State.....



NEWS NOTES **INFORMATION**

If you write maker identify as IEN - 1367

CONSTRUCTION . . Research on wood and timber engineering are summarized in 32-page report

Timber Engineering Co.
1317-21 18th St. N. W., Washington 6, D. C.

What the lumber industry is doing to hold its markets is described in new booklet, "Advancements in Wood Research and Timber Engineering". The booklet stresses the part played by research, shows what is being done and in what fields, applications of previous work, product testing.

If you write maker identify as IEN - 1368

DRIVES . . Fifty years of progress are reviewed in transportation and material handling

Fuller Mfg. Co.
Prouty & Boyles Sts., Kalamazoo 14, Mich.

"Transmission Topics," company's house publication, uses photographs in its 50th Anniversary Issue to illustrate the "good old days" in highway transportation and the long way we have come from there. It shows how roads are built today, the variety of jobs done by highway trucks, other modern mobile equipment using company's transmissions.

If you write maker identify as IEN - 1369

DUST COLLECTING . . Useful information on standard dust collectors and their effectiveness

American Air Filter Co.
123 Central Ave., Louisville 8, Ky.

Originally presented as part of the Michigan State Industrial Ventilation Course, a technical paper prepared by the company now is offered as 12-page Reprint 270-P2. Author is John M. Kane, Manager of the company's Dust Control Division. In it he tells reasons for dust collectors, relative efficiencies of various types, how they work and relative cost.

If you write maker identify as IEN - 1370

LIGHTING . . Picture book shows results when proper illumination is used for plant interiors

General Electric Co.
1 Nela Park, Cleveland 12, Ohio

"New look" in industry is compared with the old by before-and-after pictures in Bulletin 8 of the company's "See Better—Work Better" series. Ceiling illumination is featured, fixtures that direct some light upward are emphasized, color pictures show what can be accomplished. Renting fixtures is one of the ideas presented.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1371

Amazing new BABY DOZER!

6 FOOT LIFT!

PACKED WITH POWER!

New MIGHTY MOUSE High Lift Tractor-Dozer pivots within its own length. Weighs only 1300 lbs., yet dozes and hydraulically lifts a 5-cubic foot capacity bucket up to 6 feet! Machine only 40½" wide, 95" long. 6 H.P. engine, 2 speeds forward, and 1 reverse. Front end attachments are bucket, dozer blade, mower or rotary broom; rear end pulls rotary tiller, cultivator, plow, scarifier, etc. CONTRACTORS: load skip mixers, small trucks, level earth! MUNICIPALITIES: clear snow, back-fill parkway trenches, control weeds. FOUNDRIES: many uses! FARMERS, ESTATES: clean barn, till soil, plow snow, etc. Circular FREE!

MEAD SPECIALTIES CO.
Dept. T-123, 4114 N. Knox
Chicago 41, Ill.

MEAD'S "MIGHTY MOUSE" DOZER-TRACTOR

BASIC TRACTOR Less Attachments $890 FOB FACTORY

If you write maker identify as IEN - 1372

Request Your Copy Now!

New catalog shows how

Di-Acro (pronounced Die-ack-ro) is the registered brand name for DI-ACRO Brakes, Notchers, Punch Presses, Rod Parters, Rollers, Shears, Benders.

"DIE-LESS DUPLICATING" SAVES TOOLING COSTS, SPEEDS PRODUCTION

Shows many photos of "Die-Less Duplicating" forming technique with Di-Acro Machines. Features 36 hand and power models in quick reference tables. Explains free Di-Acro Engineering Service. Write for your copy now.

di-acro
PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MANUFACTURING CO.
318 8th Avenue • Lake City, Minnesota

If you write maker identify as IEN - 1373

SYSTEM *speeds* ORDER MAKE-UP

A large Eastern wholesale drug company raised their order make-up department to top efficiency by installing a Louden Monorail System. Such systems are adaptable wherever lots of small articles are made up from diversified stock.

A hand-pushed system operating throughout a multi-story building, the Monorail installation has increased storage capacity to a maximum, while permitting greatest accessibility to the shelving. Truck and floor maintenance has been eliminated, as has damage of goods resulting from collisions.

Movement between floors is accomplished with standard Louden track lift sections.

WRITE FOR FREE BOOK
Case histories of successful Monorail applications in many different types of industries are contained in an illustrated book called, "Economical Material Handling," free on request.

THE LOUDEN MACHINERY COMPANY
7311 S. Superior Ave., Fairfield, Iowa

Louden
OVERHEAD MATERIAL HANDLING

If you write maker identify as IEN - 1375

DO THESE NEW

Reuland motors

FIT INTO YOUR PICTURE?

(cut-away view)

FLUID-SHAFT MOTOR — Provides smooth acceleration of heavy loads. More compact than separate motor and fluid coupling. *Perfect alignment!* Thousands in use on cranes, mixers, centrifugals, etc.

FLUID - SHAFT MOTOREDUCER — This Fluid-Shaft motor and gear reducer combination converts the motor's conventional high speed into a slow speed, smooth starting, compact unit. Ideal for car pullers, conveyers, dryers, etc.

MAGNETIC BRAKE — The only brake that permits the use of TWO output shafts per motor. *When desired the motor shaft can be extended right through!* Only 6 major parts...no levers or linkage . . . self adjusting . . . half usual length!

Write for new engineering folder on these and other *exclusive* Reuland Products... *industrial units designed to fill the needs of the nation's leading equipment manufacturers!*

REULAND
ELECTRIC COMPANY
ALHAMBRA, CALIF.
Representatives in all principal cities
FIRST IN QUALITY . . . FIRST IN DESIGN

If you write maker identify as IEN - 1376

JOHNSON FLEXIBLE METAL HOSE AND FITTINGS for coolants, lubricants, air

WILL "STAY PUT" WHEN BENT TO ANY POSITION

Five sizes 1/8 to 3/4 in. i.d.
Nine lengths 6 to 36 in. with fittings
Made of oil tempered steel

WRITE FOR FURTHER INFORMATION

JOHNSON METAL HOSE, INC.
P. O. Box 952, Waterbury, Conn.

If you write maker identify as IEN - 1377

Rafter-high storage of bulky boxed cereals at Kellogg Company, Battle Creek, Michigan.

Put 'em up . . . stop lacking storage capacity and overcrowding floor space . . . start stacking capacity-loads and cash in on otherwise wasted overhead space. Stacking is just one of countless handling jobs you can count on Towmotor to *keep on* doing better. "Man-Hour Thieves" tells the complete cost-cutting story. Write for your copy and name of your nearest Towmotor Representative. Towmotor Corporation, Div. 2602, 1226 E. 152nd St., Cleveland 10, Ohio.

TOWMOTOR
THE ONE-MAN-GANG

FORK LIFT TRUCKS and TRACTORS
Since 1919

RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN - 1378

FLOORS . . Full size drawings show details on abrasive non-slip stair treads

Wooster Products Inc.
11 Wooster St., Dept. 102-I, Wooster, Ohio

"Safety Treads" is new 28-sheet file folder on company's line of stair treads in abrasive-insert or cast abrasive-metal designs. Full-size drawings are a feature along with other smaller drawings to show installation methods and suggestions, standard sizes and specifications.

If you write maker identify as IEN - 1379

LIGHTING . . Book of standard practice on lighting for plants from aircraft to woodworking

Illuminating Engineering Society
1860 Broadway, New York 23, N. Y.

Information on the subject has been brought up to date in revised 40-page edition of American Standard Practice for Industrial Lighting, last published in 1942. List price is 50 cents. The book analyzes factors that influence seeing, presents recommendations and examples, maintenance suggestions.

If you write maker identify as IEN - 1380

MAGNESIUM . . And rare earth metals combined as casting alloys are described in reprint

Dow Chemical Co.
913-17 Jefferson Ave., Midland, Mich.

Summary of work done to date on magnesium-rare earth casting alloys is given in 4-page reprint from the technical literature. Title is "Lighter Designs Possible with Magnesium-Rare Earth Casting Alloys." Zirconium and mischmetal are the chief constituents. Ask for Bulletin DM-RP-167.

If you write maker identify as IEN - 1381

MAGNETS . . Application ideas on Alnico permanent magnets in data sheet form

Carboloy
11167 E. 8-Mile Road, Detroit 32, Mich.

Once each month the company will send you a new data sheet called "Magnet Ideas" if you request it to do so. It also will send you a file folder in which to place these sheets. Each sheet presents a specific application suggestion on Alnico permanent magnets such as holding plant-layout templets to a board, floor sweepers, holding sheet rigid for shearing.

If you write maker identify as IEN - 1382

MANAGEMENT . . Your executives will benefit from sharing discussions at AMA workshop seminars

American Management Association
330 W. 42nd St., New York 36, N. Y.

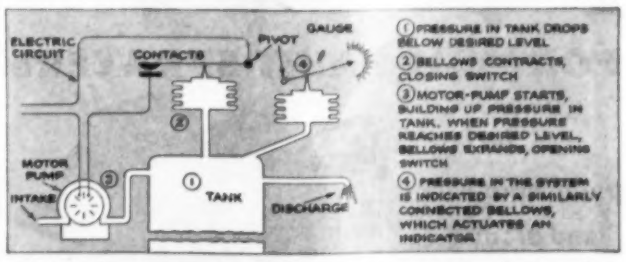
Some 1,500 executives will pool their industrial and business experience this spring in the series of seminars sponsored by the Association. Each seminar is a discussion group of not more than 15 executives who meet for three days. The seminars cover general management, manufacturing, marketing, personnel, finance. Details and dates are given in 36-page "Workshop Seminar Program."

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1383

A PAID NEWS ADVERTISEMENT BY CLIFFORD MANUFACTURING CO.

PRESSURE CONTROL and indication through bellows system is accurate and dependable.



This bellows system observes pressure changes, then signals and acts with precision and speed

Clifford Bellows assemblies for pressure control are highly sensitive, accurate, swift and positive in action. Such dependable control and indication is possible because the pressure, being precisely the same throughout the system is immediately exerted on the bellows which responds without lag.

In Taylor Ratio Controllers, for instance, the control of temperature, pressure, rate of flow or liquid level in a desired ratio or differential to another variable, is accomplished by Clifford Bellows. Other applications include pressure-change compensation for altitude changes in aircraft and fuel pressure control in combustion equipment. Clifford is glad to answer your specific questions and provide "bellows-engineering" help.

Write for bulletin: "What To Consider When Selecting Metallic Bellows."

CLIFFORD MANUFACTURING COMPANY
146 GROVE ST., WALTHAM 54, MASS.
Division of Standard-Thomson Corporation

If you write maker identify as IEN - 1384

LONGER Anode Life . . . With Udylite Ferrolum

Udylite Ferrolum Anodes are made with a STEEL core, clad with lead . . . the molecules of both metals are bound inseparably together. The anodes can't crack or peel no matter how they are bent or twisted. As a result, Ferrolum Anodes combine high, even electrical conductivity with the finest corrosion resistance . . . PLUS great rigidity and strength!

New Udylite Ferrolum Anodes offer exceptionally long life. That means long-range economy as well as low initial cost. They offer more uniform deposits too, with less build-up of insulating film and shorter plating time. Also, Udylite Ferrolum Anodes are much lighter in weight.

These new anodes are available in type I, Chemical Lead Clad, type II, Tin-Lead Clad, and type III, Antimonial Lead Clad.

Get the full story on these NEW Udylite Ferrolum Anodes from your Udylite technical man today, or write direct. THE UDYLITE CORPORATION, DETROIT 11, MICHIGAN.

Check these Advantages —

1. Economical cost.
2. Better and more uniform conductivity.
3. Great rigidity and strength.
4. Lightness in weight.
5. Less build-up in insulating film.
6. Longer Life.

THE UDYLITE CORPORATION
DETROIT 11, MICHIGAN
PIONEER OF A BETTER WAY IN PLATING

If you write maker identify as IEN - 1385

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

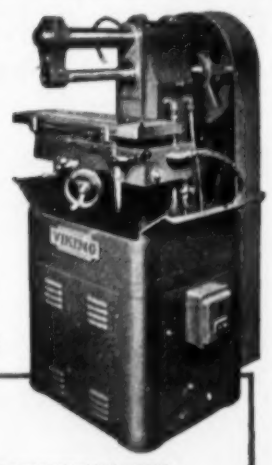
If you write maker identify as IEN - 1386

The Versatile

VIKING Hydraulic SPEED-MILL

For conventional and climb milling

IDEALLY SUITED FOR SECONDARY SCREW MACHINE WORK



- INFINITE VARIABLE SPEED WITH DIAL-CONTROLLED DRIVE
- AUTOMATIC HYDRAULIC CYCLING
- OVERSIZE DESIGN AND CONSTRUCTION
- HEAVY FLYWHEEL DESIGN GIVES SMOOTHER DRIVE, BETTER FINISHES
- ATTACHMENTS FOR VERTICAL MILLING
- QUICK SET-UP, EASY OPERATION

The new improved Viking Speed-Mill, ideal for secondary operation work in screw machine shops, is the answer to many light, production milling problems. With the Viking, small, light pieces requiring multiple cuts, good finishes, and close limits can be machined quickly, accurately, and economically. Set-ups are fast, operation is easy, even with relatively untrained operators. Automatic hydraulic cycling and infinite spindle speed variations assure higher production efficiency and longer cutter life.

BRIEF SPECS: 7-5/8" x 24-1/4" table. Cutting lengths up to 9", transverse movement, 2-5/4", vertical adjustment, 10". 2" dia. spindle, variable speeds 50 to 5000 r.p.m. Accommodates cutters up to 6" diameter.

Emergency delivery in less than 30 days. For complete information Write —

VIKING Industries

220 MONTAGUE ST. • ROCKFORD, ILLINOIS

If you write maker identify as IEN - 1387

TAL PORTABLE BENDERS

Complete ALL Piping Jobs FASTER

SAVE ON

- Number of Fittings
- Elbows & Couplings
- Cutting, Threading
- Overall Costs

Install pipe & conduit *faster* at *lower cost* by saving on cutting and threading and by reducing up to 80% the number of fittings or elbows & couplings otherwise needed. You can with a Tal, because Tal Portable Benders make any degree bend up to 180° in a *single* operation without shifting the pipe.

No guesswork for offsets, long sweeps or any other bends. No experience necessary to make accurate, wrinkle-free bends right on the job. *No spoilage.* Bend indicator assures identical repeat bends without measuring. Learn today how you can earn more money and handle more jobs with a Tal Bender.

COMPLETE LINE OF BENDERS
For pipe up to *8 inch.*
For copper and thinwall tubing.
6-Way Hickeys — lifetime guarantee.

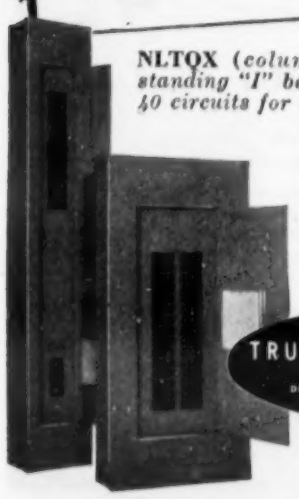
WRITE FOR THIS FREE BULLETIN

TalBender, Inc. Dept. 2 Milwaukee 2, Wis.

If you write maker identify as IEN - 1388

Check these features of
Trumbull NLTQ Lighting Panelboards

- Incorporate Trumbull TQL plug-in circuit breakers with thermal-magnetic trip, trip-free action, trip indicating position, manual re-set.
- Readily removable interiors, with busbars molded in plastisol (run cooler than in open air).
- Protected barriers, integral with front.
- Breaker knockouts in front panel to provide for future circuits.
- Compact boxes with adequate knockouts and gutters.



NLTQX *(column type) Panelboards fit standing "I" beam. Available in from 4 to 40 circuits for both 3- and 4-wire services.*

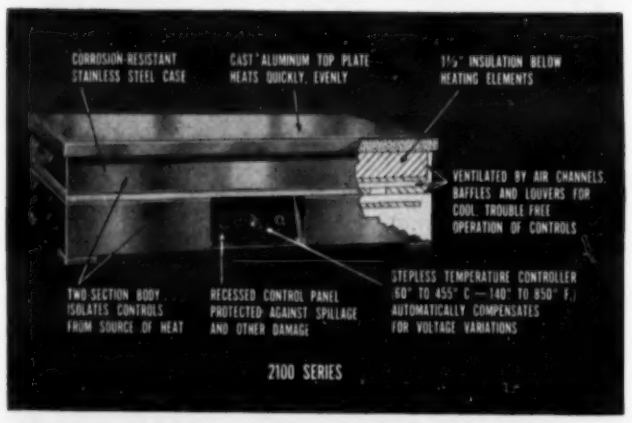
NLTQ *Panelboards: Available in from 4 to 42 circuits for both 3- and 4-wire services with lugs only, or 50 to 225 ampere breakers in mains and 10 to 50 ampere breakers on branches. AC only.*

TRUMBULL ELECTRIC
DEPARTMENT OF GENERAL ELECTRIC COMPANY
PLAINVILLE CONN.

Sold everywhere through leading distributors. Let us mail you Bulletin TEB-14.

If you write maker identify as IEN - 1389

CLOSELY CONTROLLED HEATING
. . . with fast-heating, versatile TEMCO Hot Plates for boiling, evaporations, etc.



Here's the Hot Plate that processes your work precisely! *Completely variable* regulation of temperature between 60° and 455° C. (140° to 850° F.). Built-in controls hold temperature to extremely close limits, without variations due to line voltage changes. Economical to operate . . . current is "on" only half of the time to hold 260° C. (500° F.). Scientifically designed throughout to meet strict functional requirements. Two sizes: 12" x 12", 1300 Watts, and 12" x 24", 2600 Watts . . . both 7" high. $65 and $85. Write for literature and name of nearest dealer.

TEMCO HOT PLATES

THERMO ELECTRIC MFG. CO., 482 HUFF STREET, DUBUQUE, IOWA

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 1390

MANAGEMENT . . Industrial relations films are grouped by subject in new 76-page directory

Film Research Associates
150 E. 52nd St., New York 22, N. Y.

Details on 339 motion pictures and slide films from 77 sources are presented in new "Film Guide on Industrial Relations", list price $3. The films are grouped under general human relations, supervisory training, leadership development, employee relations, selection and placement, health and safety, communications, labor organizations, public and community relations.

If you write maker identify as IEN - 1391

MANAGEMENT . . Retirement of executives described in book on personal and company problems

Harvard Business School
Soldiers Field, Boston 53, Mass.

Harold R. Hall, Professor of Research in Business Administration, is author of new 312-page book, "Some Observations on Executive Retirement." List price is $3.75. Topics include company retirement plans, preparation by the individual for retirement, where to live, suggestions on the subject by retired executives, some social and economic consequences.

If you write maker identify as IEN - 1392

MANAGEMENT . . Five steps are outlined to set up cost control procedure in metal working plant

Harold F. Howard Co.
319-A Fisher Bldg., Detroit 2, Mich.

"Manufacturing Cost Control" is title of an article in the literature now offered in 4-page reprint form. It tells what one machine shop did in a situation of increasing volume but shrinking profits. It defines cost control and gives a five-step procedure to assure that it will work.

If you write maker identify as IEN - 1393

MANAGEMENT . . Training films on 1,390 subjects are summarized in bibliography

National Metal Trades Association
120-24 S. Michigan Ave., Chicago 3, Ill.

Aerodynamics to Woodworking is the scope of subjects covered in new Third Edition of "Industrial Film Bibliography". List price of the 100-page book is $2. Information summaries on individual films are grouped by subject and are indexed by title with data on content and form.

If you write maker identify as IEN - 1394

METAL SHOT . . As a backup material in shell molding and other uses is described in bulletin

Metals Disintegrating Co.
1188-92 Arthur Blvd., Elizabeth B, N. J.

High-density mobile properties of metal shot are the reason for its use as a weighting or backup material. Application of these properties in making shell molds for metal casting is described in Technical Bulletin 5 by the company's Harrison Abrasive Division. It consists of 4 typewritten sheets on how metal shot can be used, shows a test box for determining effectiveness of backup materials with results obtained.

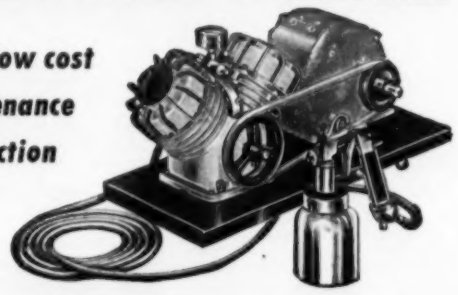
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1395

Speedy Sprayer

PORTABLE PAINT SPRAYERS

for low cost plant maintenance and production



Dozens of handy, money-saving uses for these portable SPEEDY SPRAYERS! Operate anywhere in or out of your plant beyond the reach of air lines. Rugged, powerful, sprays all materials. Or use as source of compressed air, as vacuum pump or to inflate tires, etc. Absolutely clean, oil-free air assured by proved diaphragm principle employing no oily pistons. Order SPEEDY SPRAYER from your mill supply house or write direct for free catalog.

MODEL 444—½ H.P.
Heavy duty master twin. Delivers 4 cu. ft. air per minute at 40 lbs. Operates with ½ H.P. motor or gas engine. Complete with gun, 15 ft. air hose, less motor, $59.50

MODEL 890—¼ H.P.
2 cu. ft. air per minute at 30-40 lbs. pressure, less motor, $32.50

No. 778 Utility Paint Container for above models, holds 3 gals. paint. $19.95

W. R. BROWN CORP.
2671 Normandy Ave., Chicago 35, Ill.

Specialists in Portable Sprayers for over 20 years

If you write maker identify as IEN - 1396

Variable Speed Control for Light Machinery

Costs only a trifle — brings amazing results

Converts a constant speed motor to a variable speed drive . . . fits on standard motor shaft. Provides accurate, positive speed changes while the machine is running. With a turn of handwheel, you get exactly the right speed for every job under every changing condition. Sizes from ⅛ to 1½ hp—$7.50 and up. Write for Bulletin IN 66b-J.

Reeves Pulley Company • Columbus, Ind.
REEVES *Variable Speed Control*

If you write maker identify as IEN - 1397

New Hydra-Curve Jaws make tough sheet-forming jobs easy!

HUFFORD HYDRA-CURVE JAWS simplify stretch-wrap forming of deep curvatures; permit stretch-wrap forming of sheet parts heretofore difficult or impossible by this process. Hinged jaw elements curve sheets to almost any shape, matching cross-sectional die curves. Eliminates wrinkling, *reduces material requirements as much as 30% on each piece,* provides many other forming advantages.

Write for Details—*If you stretch-wrap form parts from sheets, get the facts on Hufford HYDRA-CURVE JAWS!*

HUFFORD Machine Works Inc.
1700 EAST GRAND AVENUE • EL SEGUNDO, CALIFORNIA

If you write maker identify as IEN - 1398

NORTH AMERICAN USES
Lube-Lok
Bonded to Metal Lubrication
ON
FLAP TRACKS

Lube-Lok fights friction on North American's FLAP TRACKS . . . provides lubrication at critical low temperatures encountered at high altitudes.

Every day Lube-Lok solves critical lubrication problems for aircraft industries, armed services, etc.

NATION-WIDE PROCESSING PLANTS

Albuquerque, N. M., Machine Engineering Service
Chicago, Ill., Metro Electro Processing Corp.
Colorado Springs, Colo., Gagnon Plating & Mfg. Co.
Detroit, Mich., Parker-Wolverine, Div. of the Udylite Corp.
Los Angeles, Calif. Electrofilm Corporation
Minneapolis, Minn., Superior Plating & Rust Proofing Co.
Newark, N. J. Pyrene Manufacturing Company
Ravenna, Ohio Allen Aircraft Products, Inc.
St. Louis, Missouri Mid-West Rust Proof Co., Inc.
Seattle, Wash. Precision Engineering, Inc.
Tulsa, Okla. A & B Commercial Finishing Co.

Electrofilm CORP.
DEPT. LA4 7116 LAUREL CANYON BLVD., NO. HOLLYWOOD, CAL.

If you write maker identify as **IEN - 1399**

WON'T SMUDGE • RESISTS: DIRT GREASE WATER ACIDS

LABELON PLASTIC *Write on it* TAPE

STICKS WITHOUT MOISTENING

For SHOP, TOOLROOM, LABORATORY, SERVICE, OFFICE, etc.

Nothing else like LABELON—the amazing "Write on it" plastic tape! Use it to label stockroom shelves, bins, tools, hard-to-mark parts; for indicating rejects and service department repairs; for marking laboratory equipment, supplies, experiments; for panel boards, or wiring; for office files, folders, etc.

LABELON TAPE sticks without moistening to any smooth, clean surface—yet can be quickly removed. Resists heat up to 160°. Just write on with pencil or stylus—message won't smudge. Choice of widths and colors. Handy dispenser with cutter bar.

See your nearest dealer, or write for sample and prices.

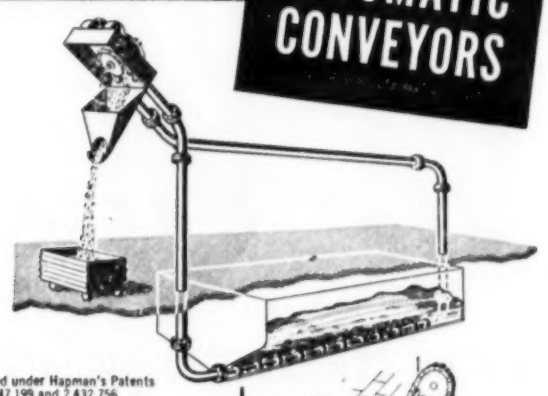
Write to Dept. IEN

LABELON TAPE CO., INC.
450 Atlantic Ave., Rochester 9, N. Y.

If you write maker identify as **IEN - 1400**

Get automatic **LOW COST** handling of loose materials such as:
METAL WORKING CHIPS • DUST • SCALE • CRACKLINGS • POWDERS • ETC. *with*

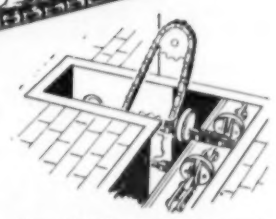
HOUDAILLE AUTOMATIC CONVEYORS



Licensed under Hapman's Patents No. 2,147,199 and 2,432,756

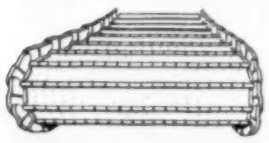
Houdaille Chain Drag Conveyors

Completely enclosed flights and chain automatically collect, transport and discharge chips, sludge, scale and other types of solid or fibrous material which settle to the bottom of tanks or hoppers. System eliminates manual handling methods, conserves manpower and requires little or no maintenance. Available in standard pipe sizes of 3", 4", 6" or 8". Larger sizes available on request. Choice of chains, flights, casings, accessories available, depending on application.



Houdaille Open Trough Chain Conveyors

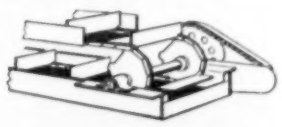
Chain Drag Conveyors, installed in open troughs, offer advantages in many operations. Below-floor-level installation, illustrated, removes chips from gear cutters, keeps system from interfering with heavy traffic plant areas . . . offers access to chain and flights at any point of circuit.



Houdaille Pan Type Conveyors

One-piece, heavy-gauge steel plates, with all-welded hinges, lock together firmly with connecting rod to form perfect pan-type conveyor for chips. Welded hinges, rod connections and side wings, securely interlocked even when chain negotiates sprocket, prevent fall-through of material. Plates perforated for drainage, depending on application.

All Honan-Crane equipment is sold on a performance guaranteed basis.



Houdaille Slat Type Trough Conveyors

Slat type trough conveyors, operating individually or in sequence, transport material to any given point—can be operated continuously or intermittently as desired. Slats and chain move material in open troughs, return automatically to collection or transfer points.

NEW Comprehensive Catalog . . .

with complete information on all Houdaille conveyors now available. Write today on company letterhead to . . .

WORLD'S LEADING OIL FILTER MANUFACTURER

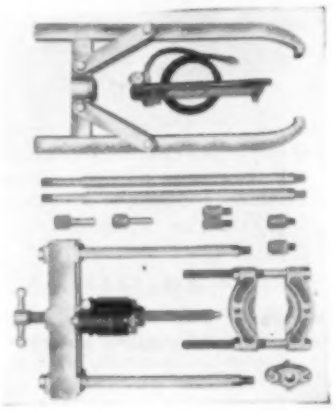
Honan-Crane Corp.
802 Wabash Ave., Lebanon, Ind., *a subsidiary of*
Houdaille-Hershey Corporation

In Canada: E. W. PLAYFORD, LTD., Montreal 28
W. E. MICKLETHWAITE, Toronto 18
CUMMINGS GALBRAITH, LTD., Edmonton, Alta.

If you write maker identify as **IEN - 1402**

PULLING . . Hand hydraulic tools to remove and replace machine parts

Source: OWATONNA TOOL CO.
371 Cedar St., Owatonna, Minn.



Steady pressure

Type Y-285 is a new 50-ton hand hydraulic puller employing the company's new Power-Twin hand operated hydraulic unit with suitable pulling frames and attachments. Operation can be specified with a three-speed hand pump or with a motor operated pump. The set is designed for general construction and maintenance applications.

If you write maker identify as **IEN - 1403**

CLEANING . . Liquid solvent removes grease, oil from metal parts

Source: GRAYMILLS CORP.
3709 N. Lincoln Ave., Chicago 13, Ill.

Removes oils and sludge

A new detergent, known as Tergene, is now a part of the formula for the company's general purpose cleaning solvent Agitene. The new formula is listed by Underwriters' Laboratories, Inc., as having a flash point of 110 deg. F. It is safe to use in cold dip tanks. It is non-toxic, will not harm any metal and does not require a water rinse.

The liquid has a distinctive light blue color and mild pleasant odor. It is packaged in 5, 30 and 55-gal. drums. List price in the 55-gal. drum is $44.50. A 5-gal drum lists at $6.

If you write maker identify as **IEN - 1404**

PACKAGING . . Plastic drum liner employs circular disc at the bottom

Source: MEHL MFG. CO.
2055-59 Reading Road, Cincinnati 2, Ohio

Shaped by its disc

A fiber disc between two layers of polyethylene plastic forms the circular bottom of this new polyethylene drum liner. It serves to hold the liner in circular shape when it is inserted into a drum so no expanding mandrel is required. The liner ranges from 0.0015 to 0.006 in. in material thickness. It can be specified for drums in standard capacities to 55 gallons. It applies in both steel and fiber drums to handle food products, corrosive materials, chemicals in liquid, semi-liquid and dry form.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1405**

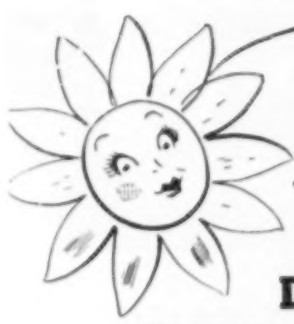
HANSEN

Hardened steel nozzles for long wear. Removes rust, paint, carbon. Prepares metal for soldering and welding. Holds 3 pounds silica sand, works efficiently with 80 to 125 pounds compressed air. Air Blow Gun, which is a detachable part of sand blast cleaner, may be purchased separately, for blowing dust, dirt, etc. Has ¼" hose stem connection. Write for catalog.

Write for catalog showing complete line of one-way shut-off, two-way shut-off and straight-through quick connective couplings—also hose clamps, air spray cleaners, etc.

THE HANSEN MANUFACTURING COMPANY
4031 WEST 150th STREET • CLEVELAND 11, OHIO

If you write maker identify as **IEN - 1406**



BE FRESH... STAY FRESH

wear a

DUPOR No. 24

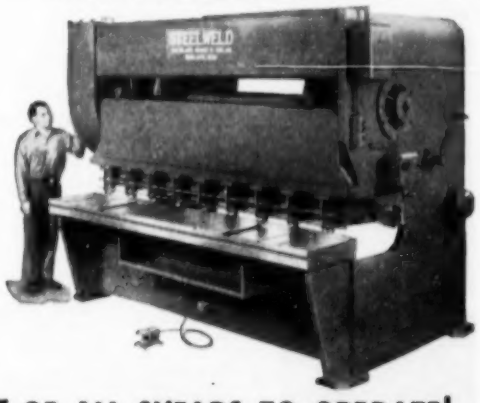
THE RESPIRATOR THAT IS U.S.B. OF M. APPROVED FOR TYPE "A" DUSTS

More than 24 sq. in. twin filter area. Sanitary face cloth. Soft rubber face mask. Has all patented DUPOR features including bulb valve controlled breathing—panorama view with no blind spots. A favorite for years!

Sample sent $3.00 *ppd*

H. S. COVER
South Bend, Ind.

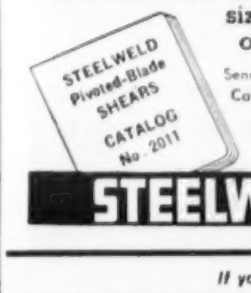
If you write maker identify as **IEN - 1407**



EASIEST OF ALL SHEARS TO OPERATE!

"Easiest of all shears to operate"—so many operators say of Steelweld Pivoted-Blade Shears. These machines are radically different from all other shears. They have many new features heretofore unavailable that ease the work, speed production, increase accuracy, reduce maintenance.

Get the facts on Steelweld Shears. Built in all sizes for plate up to 20 feet long or 1-1/4" thick.



Send for free copy
Catalog No. 2011

THE CLEVELAND CRANE & ENGINEERING CO.
4208 East 282nd St., Wickliffe, O.

STEELWELD SHEARS

If you write maker identify as **IEN - 1408**

ASK FOR YOUR FREE COPY!

IT'S *JAM-PACKED* WITH MONEY-SAVING IDEAS

There are dozens of ways the Zip-Lift can help you cut costs with "thru-the-air" handling. The Zip-Lift is easy to install. Hang it up on hook, jib, or trolley, and plug it in. Handles loads up to one ton. Write for Bulletin H20-1. This fully illustrated bulletin suggests many ways you can save time, effort, and money in your plant. Write today.

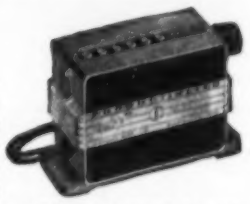
HARNISCHFEGER CORPORATION
4400 W. NATIONAL AVENUE • MILWAUKEE 46, WISCONSIN

If you write maker identify as IEN - 1409

PANEL MOUNT

MODEL "Y" ELECTRIC PRODUCTIMETER

on the MACHINE
or at CONTROL CENTER



Hi-Speed, Compact, Accurate, Durable. Adaptable to panel or base mounting.

The flexibility of the Model "Y" Electric Productimeter offers versatility of application to suit individual needs. Panel mounts grouped at control center give immediate production figures of many machines in different plant departments. Operates accurately over wide current fluctuations. Totally enclosed.

Send for Catalog No. 55

DURANT MANUFACTURING CO.
1930 N. Buffum St. Milwaukee 1, Wis.
130 Orange St. Providence 3, R. I.
Representatives in Principal Cities

PRODUCTIMETERS
SINCE 1879 Count Everything

If you write maker identify as IEN - 1410

THESE VALVES . . . HAVE CURED A LOT OF MAINTENANCE HEADACHES because they AUTOMATICALLY ADJUST FOR WEAR

Wear, that in most valves would cause leakage and necessitate complete valve renewals, simply doesn't faze a HOMESTEAD-REISER. Its two-piece, wedge-acting plug constantly and automatically adjusts itself to make up for wear as wear occurs. The valve acts on its own. It is SELF-SEALD! Result: Extra long, leakless service life . . . more operations between lubrications . . . less maintenance . . . lower plant operating costs. Available in semi-steel or cast steel; 100% port area or Venturi type; sizes ½" to 14" for steam working pressures to 150 lbs.; or oil . . . water . . . gas to 200 lbs.

Complete data and prices sent on request. Write today for VALVE REFERENCE BOOK No. 39. No obligation.

HOMESTEAD
VALVE MANUFACTURING COMPANY
"Serving Since 1892"
P. O. Box 85 . Coraopolis, Pa.

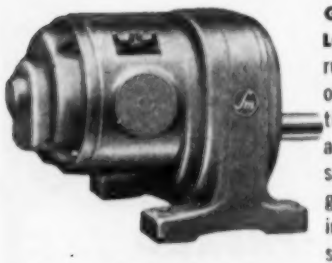
HOMESTEAD-REISERS SEAL THEMSELVES
The wedge-action of the two-piece plug under line pressure, presses the plug outward against the body, keeping plug and body surfaces in contact at all times. This automatic adjustment for wear assures extra long life and maximum leakless service.

HOMESTEAD-REISER
Self-Seald . . . Lubricated
PLUG VALVES

If you write maker identify as IEN - 1411

PLANT RECORD PROVES SLO-SPEEDS SUPERIOR

Our first experience with a few Slo-Speed geared motors on narrow fabric looms was so successful that there is now a preponderance of Slo-Speed motors in our mill, writes A. H. Geilenberg of J. M. Geilenberg & Son, Inc., Marlboro, N. H. We eliminated oil leaks found in other equipment . . . we required less installation space . . . and severe loom vibration has not affected performance of your Slo-Speeds.



STERLING SLO-SPEED GIVES YOU THE ONE BEST LOW SPEED AND gives uninterrupted service — carries heavy overhung loads — provides versatile mounting and flexibility in arrangement of machinery — saves valuable space — provides greater safety — costs less to install and use. An indispensable source of low speed power for:

Agitators	Dryers	Presses
Blenders	Feeders	Pumps
Blowers	Kilns	Screens
Conveyors	Mills	Tumblers
Cookers	Mixers	Etc., etc.

20-page illustrated catalog... Sterling Speed-Trol, Slo-Speed, Klosd and Klosd-Tite Electric Power Drives. Write for catalog No. C-422.

STERLING ELECTRIC MOTORS

Plants: New York City 51; Van Wert, Ohio; Los Angeles 22; Hamilton, Canada; Santiago, Chile. • Offices and distributors in all principal cities.

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 1412

MOTOR CONTROL . . Textbook on the subject describes standard and newly-developed equipment

John Wiley & Sons
440 Fourth Ave., New York 16, N. Y.

Revised Third Edition is announced for the book, "Control of Electric Motors", a textbook of 550 pages that lists at $7.50. Author is Paisley B. Harwood, VP. in charge of Engineering at Cutler-Hammer, Inc. Information on controls is arranged by motor types, first on dc. motors, then on ac. motors.

If you write maker identify as IEN - 1413

PACKINGS . . Booklet of design data on molded packings for pneumatic and hydraulic service

Greene, Tweed & Co.
342 Elm Ave., North Wales, Pa.

Booklet MP-200 is new 32-page assembly of technical information on the company's Palmetto molding packing. It is intended to assist in selection, specification and application. Descriptions of five types, characteristics, recommended dimensions, design procedures are given.

If you write maker identify as IEN - 1414

PAINTING . . How to use color in plant and machine painting as an aid to production

E. I. du Pont de Nemours & Co.
2518 Nemours Bldg., Wilmington 98, Del.

New printing has been made for the company's "Color Conditioning" manual, previously reviewed IEN-11135-50. The 32-page booklet tells how to use color, shows how color influences people, how to raise illumination level with color and provide better seeing at the work point, how to use color to make non-working areas attractive. Ask for Form A-9624-Rev.

If you write maker identify as IEN - 1415

PHOTOGRAPHY . . Instruction booklet on how to take photographs through a microscope

Eastman Kodak Co.
341-45 State St., Rochester 4, N. Y.

Choice of equipment, basic principles involved, available materials, illumination, filters, procedures, correct exposure, special techniques are among the topics covered by new 72-page data book, "Photography Through the Microscope". List price is 50 cents. Several color photomicrographs are included.

If you write maker identify as IEN - 1416

PLASTICS . . Data sheets on nylon to keep you up to date on applications by industry

E. I. du Pont de Nemours & Co.
9524-B Nemours Bldg., Wilmington 98, Del.

"News Facts" on nylon plastic titles a series of typewritten data sheets dealing with applications of the molded plastic in seven categories. These include use in the electrical industry, in business machines, in aircraft, in medical and hospital service, automobiles, textile machinery, household appliances.

Applications are described on the basis of nylon's properties such as strength, ability to mold into complex shapes, abrasion resistance, low coefficient of friction, resilience, resistance to solvents and heat, good electrical properties.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1417

BLAST-OFF STUBBORN GREASE!

STEAM-KLEEN INCREASES SAFETY AND CLEANING ABILITY OF YOUR STEAM CLEANING APPARATUS!

STOP USING DANGEROUS CAUSTICS!
Caustic powders used in steam cleaning apparatus give off toxic or choking fumes, burn skin and clothing and cause excessive wear and damage to equipment. Authorities caution against the use of dangerous caustics!

STOP CLOGGAGE OF EQUIPMENT!
Caustic powders contain insoluble fillers which clog and corrode steam cleaning equipment. In addition, caustics combine with hard water salts to form insoluble scales which damage equipment!

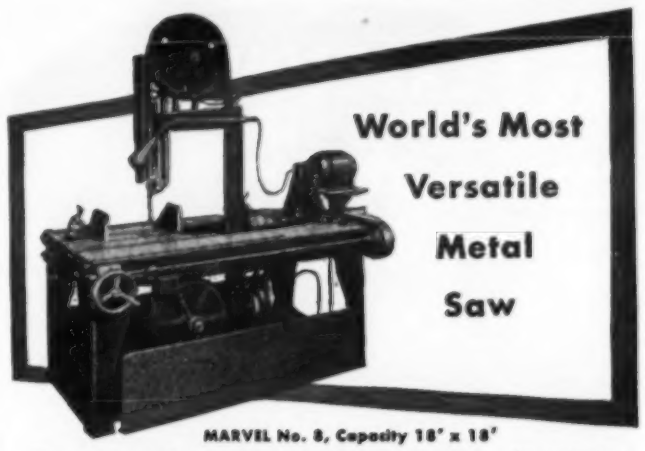
STEAM-KLEEN IS ECONOMICAL & SAFER TO USE!
Use STEAM-KLEEN in your steam cleaning apparatus to eliminate all the dangers of caustics. No mask or protective clothing is needed! Economical to use, one pint STEAM-KLEEN per 5 gallons water cleans even the greasiest, grimiest surfaces!

OTHER USES!
A few ounces of STEAM-KLEEN per gallon water is excellent for hot tank degreasing—safe even on aluminum! Also ideal for mopping greasy factory floors. Available in two strengths — Regular (STEAM-KLEEN) and Heavy-Duty (Formula 611).

SEND FOR FULL INFORMATION!

the PENETONE Co.
BOX IEN-253 TENAFLY, NEW JERSEY

If you write maker identify as IEN - 1418



MARVEL No. 8, Capacity 18" x 18"

There is no other sawing machine like it. The work remains stationary. The blade is guided with a 90° twist and power fed vertically through the work. The saw blade and column can be instantly swung and clamped at any angle to 45° either right or left from vertical for miter cutting.

The number 8 MARVEL saw will handle the smallest, as well as the largest work up to 18" x 18". It will cut-off, trim, miter, notch, and split all bar stock, pipe, structural sections, moulding, tubing, or irregular shapes.

Write for our catalog, containing valuable information, enabling you to select a metal saw best suited to your work.

MARVEL Metal Cutting SAWS
Better Machines—Better Blades

ARMSTRONG-BLUM MFG. CO.
"The Hack Saw People"
5700 Bloomingdale Ave. Chicago 39, U.S.A.

If you write maker identify as IEN - 1419

Special cold headed products

. . . nails • rivets • screws . . . made to order

. . . and to your specifications in any metal. Large raw material inventory for your convenience. Send drawing—advise quantity. *Free catalog on request.*

JOHN HASSALL INC.
132 Clay Street Brooklyn 22, New York

If you write maker identify as IEN - 1420

You Don't NEED Muscles

No other hand tool does so MANY jobs — so EASILY! A squeeze of the hand *locks* jaws to any size work with *TON-GRIP.* Won't slip! Turns, twists, bends, holds, cuts, ratchets. 7" and 10", with or without cutter. List $1.85 to $2.60. See your supplier.

Manufactured Only By
PETERSEN MFG. CO., INC.
Dept. IE-2 DeWitt, Nebr.

If you write maker identify as **IEN - 1421**

REALOCK FENCE

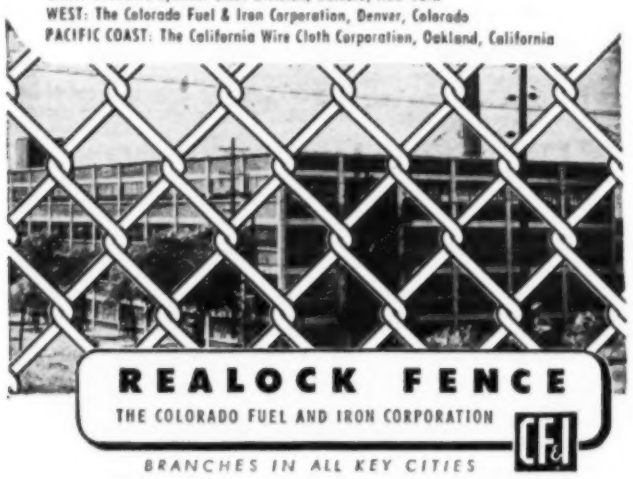
means what it says

Realock Fence provides real locked-in protection for your grounds and property. All fittings have bolts placed so that nuts are removable only from the inside ...thereby insuring safety from intruders.

Realock Fence is heavily galvanized by a special process...gives weather-resistant, durable service year after year with little or no expense for maintenance. Expert erection service is conveniently available.

For additional information write our nearest sales office or consult your classified telephone directory.

EAST: Wickwire Spencer Steel Division, Buffalo, New York
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, California



REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION CF&I
BRANCHES IN ALL KEY CITIES

If you write maker identify as **IEN - 1422**

disappear quickly, completely with low cost, disposable KIMWIPES*!

Now—a *safe*, clean, absorbent tissue made especially for laboratory or plant! New Kimwipes* industrial tissues clean faster, easier, better—do every job from wiping ink to precision polishing without scratching, linting or disintegrating.

You'll find dozens of uses for Kimwipes—end the dangers of dirty, scratchy cloths—and completely eliminate unnecessary laundering. Each tissue is a "man's handful"; strong yet amazingly absorbent, and completely non-abrasive. So inexpensive, a fresh, clean tissue can be used for each application—then thrown away! Kimwipes are recommended especially for wiping safety goggles and face shields after applying liquid cleaner, wiping up machine oil or dangerous chemicals.

Order a supply today from your distributor. Two tissue sizes—15" x 18" and 5" x 9". For complete information, write to Dept. **DD-23,** Kimberly-Clark Corporation, Neenah, Wisconsin.

GRIT-FREE! Kimwipes keep safety goggles and shields clean without scratching, linting or "dusting."

KIMWIPES INDUSTRIAL WIPING TISSUES

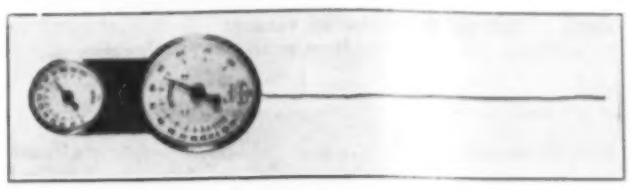
A Product of **Kimberly-Clark**

*T. M. REG. U. S. PAT. OFF. & CAN

If you write maker identify as **IEN - 1424**

THERMOMETER . . Two-dial design for indoor and outdoor temperatures

Source: WEKSLER THERMOMETER CORP.
49 W. 32nd St., 3rd Floor, New York 1, N. Y.



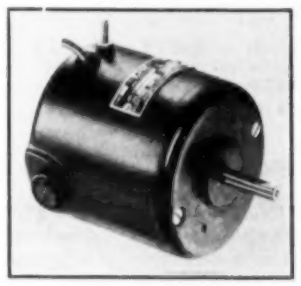
List is $7.50

A small dial for indoor temperature and a larger one for temperature out of doors are mounted in a plastic housing finished in mahogany or ivory in this new Twin-Temp thermometer. Accuracy and sensitivity are equivalent to high grade instruments. The required tubing and a temperature sensitive element, for location on an outside wall, are part of the standard equipment furnished.

If you write maker identify as **IEN - 1425**

MOTOR . . Series wound dc. or ac., 1/30 to 1/15 hp., 6 to 110 volts

Source: ELECTRIC MOTOR CORP.
State & Marquette Sts., Racine, Wis.



Details on request

Model 710 is a new unit in the company's Series-700 motors. It is built with a totally enclosed housing and will operate submerged in water. It mounts by either a band or a flange. Its bearings are permanently sealed sleeve design for grease, or precision ball design. Applications are particularly in driving small blowers or fans in cooling and space heating equipment.

If you write maker identify as **IEN - 1426**

LUBRICATING . . Pen type oiler delivers upon pressing a plunger

Source: CLOVER HOUSE
Box 1107-I, Santa Monica, Calif.

About $1

A single drop, or a squirt of oil that will reach to a distance of 5 ft., can be delivered by the operator of this new Handee oiler. It is about the size of a fountain pen and locks by turning the plunger at the rear end so no oil can escape. When this plunger is released a spring takes over to provide for pumping action to deliver a desired small amount of oil from the barrel tip. The barrel is made of transparent plastic so the supply of oil is visible.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1427**

A PAID NEWS ADVERTISEMENT BY SCHATZ MANUFACTURING CO.

How a special low-cost ball bearing eliminated assembly rejects

This Schatz "Commercial" Ball Bearing was specially designed to support the thread spool on a textile weaving machine operating at 2500 RPM under a 20-pound load. Previously, the spool had been held by a slotted washer, spot-welded to a standard bearing. Rejects were high, since the heat of the welding operation caused distortion of the balls and races.

Schatz engineers designed a new bearing with a split inner race and a flanged outer race to replace the washer. Result: the bearing could be used immediately without the costly spot-welding operation, and rejections due to heat distortion were completely eliminated.

Special "Commercial" Ball Bearings—like the one shown—are often less expensive than standard bearings, since costly assembly and machining time is eliminated.

We will be glad to adapt or design a low-cost Special Ball Bearing to fit your specific requirements. Write for literature.

THE SCHATZ MANUFACTURING COMPANY
6750 Fairview Avenue, Poughkeepsie, N. Y.

If you write maker identify as **IEN - 1428**

PORTELVATOR®

(THE HANDY HAMILTON PORTABLE ELEVATING TABLE)
LIFTS — LOWERS — LEVELS
TRANSPORTS

Eliminates "ganging-up" on heavy lifts. Reduces occurrence of industrial accidents. Eliminates the need for extra hands, extra trips.

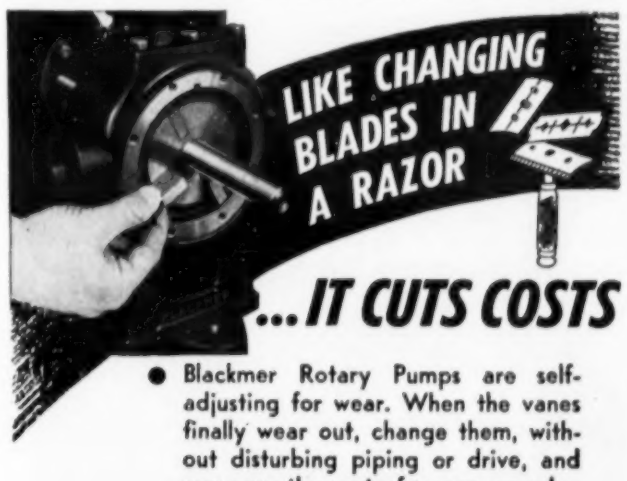
STANDARD MODEL CAPACITIES TO 5000 POUNDS

SAFETY of OPERATION is inherent in the **PORTELVATOR** mechanical lift principle, which transmits power through worm, worm gear, and screw.

TAKE TIME TO LEARN THE DIFFERENCE
WRITE FOR BULLETIN P-508

THE *Hamilton* TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

If you write maker identify as **IEN - 1429**



...IT CUTS COSTS

- Blackmer Rotary Pumps are self-adjusting for wear. When the vanes finally wear out, change them, without disturbing piping or drive, and you save the cost of a new pump!

BLACKMER
The Lifetime Pump
10 TO 1500 GPM
Positive Displacement

Get the facts

See how Blackmer Pumps handle light or viscous liquids efficiently—how they cut your pumping costs. Write for Bulletin 307

BLACKMER PUMP CO., GRAND RAPIDS, MICH.

If you write maker identify as **IEN - 1430**

Over 85% of the torque wrenches used in industry are

STURTEVANT TORQUE WRENCHES

Read by Sight, Sound or Feel

- Permanently Accurate
- Practically Indestructible
- Faster—Easier to use
- Automatic Release
- All Capacities

in inch ounces
...inch pounds
...foot pounds
(All sizes from 0-4000 ft. lbs.)

Every manufacturer, design and production man should have this valuable data. Sent upon request.

P.A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

If you write maker identify as IEN - 1431

FREE BULLETIN on SURFACE ROUGHNESS tells . . .

- **How to establish roughness specifications** for parts that are in production — and for parts of new design.
- **How to show roughness specifications** on drawings and shop prints.
- **Practical advantages** of surface roughness specification.

ALSO gives tips on MEASURING surface roughness in the shop—and briefly tells why most plants use the PROFILOMETER for doing this.

Write Today!

Ask for BULLETIN L21.

Profilometer is a registered trade name.

MICROMETRICAL MANUFACTURING COMPANY
345 S. MAIN ST., ANN ARBOR 1, MICH.

If you write maker identify as IEN - 1432

AMERICA'S *FINEST* INDUSTRIAL PACKAGING LABORATORY...

...can also provide a more efficient shipping container for YOUR product

SEND FOR FREE BOOKLET

General BOX COMPANY
GENERAL OFFICES: 1815 MINER STREET
DES PLAINES, ILLINOIS

DISTRICT OFFICES AND FACTORIES: Cincinnati, Denville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, Sheboygan, Winchendon. General Box Company of Mississippi, Meridian, Miss. Continental Box Company, Inc., Houston, Dallas

If you write maker identify as IEN - 1433

Cuts Photocopy Time To SECONDS

AMAZING NEW PORTAGRAPH COPYFIX

Portable...simple to operate... Inexpensive to use!

Copyfix is your answer to improved photocopying without time-consuming processing. Copyfix gives you, *in seconds*, a finished, photo-exact, positive copy of any office record regardless of type or color. Best of all, anyone on your office staff can do the job without previous photographic experience.

GET THE FULL STORY ON COPYFIX

REMINGTON RAND INC. Room 1700, 315 Fourth Ave. New York 10, N. Y.

Please send me free booklet P-334 describing in detail this great new unit.

Name _____ Position _____
Firm _____
Address _____
City _____ Zone _____ State _____

USEFUL INFORMATION
(*Concluded*)

If you write maker identify as IEN - 1434

PUMPS . . Interesting booklet on vacuum describes industrial uses from penicillin to television

Ingersoll-Rand Co.
11 Broadway, Dept. NR, New York 4, N. Y.

Initial statement, "Empty space is one of industry's most important working tools," is illustrated by a variety of examples in new 12-page Form 164, "Vacuum—The Magic Hat of Industry," reprinted from the literature. Diagrams show where vacuum equipment applies and the operating range of principal vacuum processes.

If you write maker identify as IEN - 1435

PUMPS . . Textbook on hydraulics describes pumps, valves, hydraulic machine tool drives

Vickers Inc.
1398 Oakman Blvd., Detroit 32, Mich.

Textbook formerly employed in the Henry Ford Trade School now is available from the company as Publication 935065. It is a 196-page book, list price $2, of practical information on hydraulic pumps and valves, their maintenance and repair, and how they are applied to machine tools to control speeds and feeds. Ask for "Hydraulics as Applied to the Machine Tool Industry".

If you write maker identify as IEN - 1436

STAMPINGS . . New house publication to acquaint you with company's activities and products

John Volkert Metal Stampings Inc.
222-36 96th Ave., Queens Village 8, N. Y.

"The Volkert View" is new quarterly publication which will be sent you on request, particularly if your interest concerns small precision stampings. One article describes production of stamped parts for electron guns in television tubes. Pictures show new facilities and company activities.

If you write maker identify as IEN - 1437

WELDING . . Color sound movie shows applications of gas shielded arc welding unit

Air Reduction Sales Co.
1656 Lincoln Bldg., New York 17, N. Y.

Aircomatic process is demonstrated for 18 minutes by new Kodachrome sound film, "Tool of Many Uses". More than a dozen examples of production-line application are shown, including welding on aluminum to 1 in. in thickness, welding on copper and aluminum bronze, stainless and mild steel, using automatic and manual equipment.

If you write maker identify as IEN - 1438

WELDING . . Contest offers $2,000 in prizes for papers on welding, brazing, soldering

Eutectic Welding Alloys Corp.
40-42 172nd St., Flushing 58, N. Y.

August 31 is the closing date for the company's 1953 competition which offers a top prize of $500 for papers on basic principles, theory and results of research. $200 is top prize for papers on practical applications. Ask for a set of contest rules, available on request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1439

MOBILIFT

Lev-R-Matic DRIVE
FORK LIFT TRUCKS

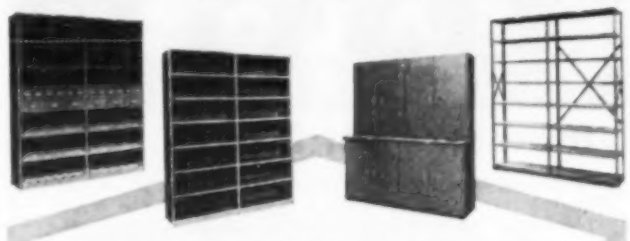
Low Cost Handling!

- STAND-UP AND SIT-DOWN MODELS
- GAS OPERATED—NO GEARS TO SHIFT
- A SIZE TO FIT YOUR NEEDS

Write for complete specifications or contact your nearest Branch Office.

MOBILIFT CORPORATION
835 S. E Main St., Portland 14, Oregon
2317 W. 18th, CHICAGO • 790 Patterson Ave., E. RUTHERFORD, N. J.
2724 Taylor St., DALLAS • 1113 Spring St. N. W., ATLANTA
2730 San Pablo Ave., BERKELEY

If you write maker identify as IEN - 1440



HOW TO SAVE MONEY ON STEEL SHELVING

The real cost of shelving is the erected cost

That's why highest quality DeLuxe shelving costs you less. DeLuxe precision shelving has *fewer parts*, uses *80% less bolts* and is the *only shelving* available that is *100% adjustable*. It's quicker, less costly to install—easier to adjust.

Wherever you are, a DeLuxe factory representative is available to give you a complete engineering, planning and layout service without obligation.

Write for a free catalog now, while your mind is on shelving.

DELUXE METAL FURNITURE CO.
303 Struthers St., Warren, Pa.

For over 25 Years Manufacturers of.
Storage Shelving • Library Shelving • Storage Cabinets • Shop Equipment

If you write maker identify as IEN - 1441

NOW another new development in Micro-Fog lubrication by NORGREN

- BEARINGS
- GEAR CHAMBERS
- SMALL AIR DEVICES

NEW FEATURES

Constant Oil Level... rate of oil feed not affected by oil supply.

Complete Visibility and Control of Oil Feed... no guess work.

Oil Feed Controlled by Air... gives very uniform rate of oil feed.

WRITE, NOW, for COMPLETE DATA

Valves • Filters • Regulators • Lubricators • Hose Assemblies

C. A. Norgren CO. 3432 So. Elati St., Englewood IN COLORFUL COLORADO

Pioneer and Leader in Oil Fog Lubrication for 25 Years

If you write maker identify as IEN - 1442

MODEL A-1D
48" Single Screen SWECO Separator

MODEL F-4D
48" Four Screen SWECO Separator

MODEL H-1D3
18" Single Screen SWECO Separator

MODEL H-4D
18" Four Screen SWECO Separator

SWECO SEPARATORS

... are Engineered for Every Screening Need

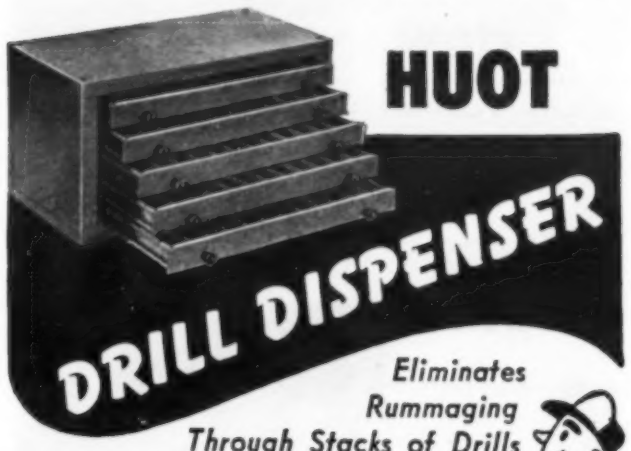
- Efficient Single or Multiple Deck Screening
- Proved Greater Production Capacities
- From Coarse to as fine as 325 Mesh
- Wet or Dry Screening
- Low Cost Operation
- Unit Completely Self Contained with only Three Moving Parts
- Readily Adjustable Horizontal and Vertical Motion
- Clamp Ring Insures Rapid Screen Cloth Changes
- No Special Foundation, Supports or Base Required for instant Production
- Production Separation with Laboratory Accuracy

Both Standard and Custom-Engineered Models Available

Write now for new 8-page catalog

SWECO SEPARATOR DIVISION
SOUTHWESTERN ENGINEERING CO.
4800 Santa Fe Ave., Los Angeles 58, Calif.

If you write maker identify as IEN - 1443



HUOT DRILL DISPENSER

Eliminates Rummaging Through Stacks of Drills

No more running out of drills—your entire stock can be seen at a glance. Each size of drill has its own compartment with rounded bottom for easy selection. You can store dozens of small drills and several large ones in their own compartments. Built-in pricing or inventory system eliminates the need for cost sheets, and will keep a record of drills on hand. *Specifications:* 14½" long, 7¼" high, 7¼" deep. Hammerlin baked enamel finish over rugged steel.

Made in three models for fractional, number or letter drills

Write for Circular

HUOT MANUFACTURING CO.

"HUOT" is pronounced "HEW-OT"

565 No. Wheeler St., St. Paul W4, Minn.

By the makers of HUOT DRILL INDEX

If you write maker identify as IEN - 1444

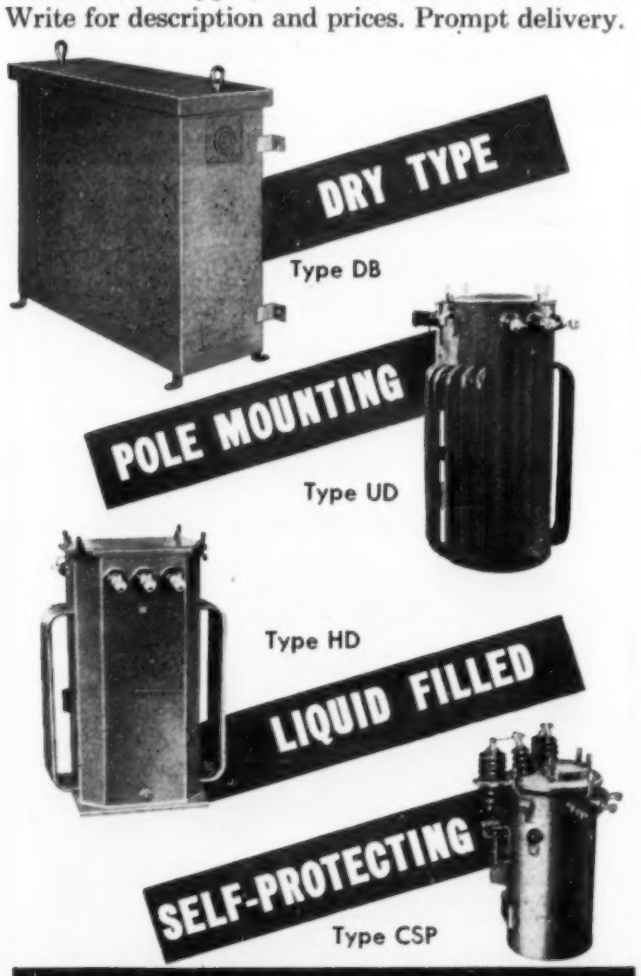
Extra protection

against short-time overloads is built into

Uptegraff

DISTRIBUTION Transformers

Meeting ASA and NEMA standards, Uptegraff Distribution Transformers are made in sizes and ratings from 3 to 500 KVA, including oil, askarel and air-cooled types, for indoor or outdoor service. Write for description and prices. Prompt delivery.



R. E. UPTEGRAFF MANUFACTURING CO.

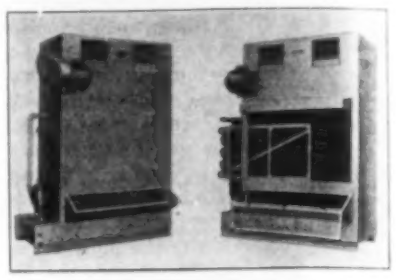
THOMAS STREET . . . . SCOTTDALE, PENNSYLVANIA

Makers of Power • Distribution • Instrument • Specialty Transformers

If you write maker identify as IEN - 1446

COOLING . . Evaporative condenser for refrigerant gases, water, oil

Source: UNITED STATES AIR CONDITIONING CORP. 3318 Como Ave. S. E., Minneapolis 14, Minn.



Rates 7½ to 40 ton

Water for the evaporative cooling action in this new Model-ECU condenser is held in a tank in the base. It is picked up by a motor driven centrifugal pump for delivery through spray heads above a copper coil. It wets the coil surfaces. Excess water returns to the tank for recirculation in a continuous cycle.

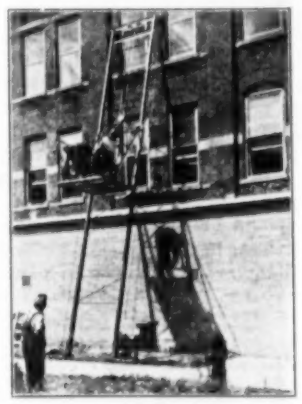
At the same time a motor driven blower assembly at the top of the housing draws air upward through a bottom entrance in counter flow to the water spray for exhaust delivery at the top. The resulting evaporative action cools a gas or fluid passed through the coil. Examples are refrigerant gas, engine jacket water, transformer oil, quenching and tempering oils.

Approximately 95 per cent of the water is recirculated so makeup water does not exceed 2.7 gph. per ton of refrigerating action. Dimensions are maximum at 51 by 37 by 102 in. for the 7½-ton unit. They are 118 by 51 by 116 in. for the 40-ton equipment. The design permits disassembly in the field for resetting in any of 16 arrangements to meet given installation requirements. Steel parts are hot dip galvanized. Application can be made inside or out of doors.

If you write maker identify as IEN - 1447

ELEVATOR . . Wheel mounted frame, load platform, engine or motor drive

Source: CONSTRUCTION MACHINERY SALES CO. Box 120-A, Waterloo, Iowa



Leans to lift

Load rating is 1,200 lb. in this new design of the company's Roll-O-Hoist Model K. It is a companion unit to the equipment, previously described IEN-8025-46, in which load rating was maximum at 500 pounds.

New design of the upright structural frame, on which the platform rides, employs cross braces that are adjustable every 2 ft. to permit a 6-ft. walk-through opening to be made at any loading or unloading level. Power is supplied by a 7½-hp. gasoline engine or a 3-hp. electric motor and winch that mounts near the base of the frame.

The platform measures 47 by 57 inches. An operator standing upon it can control its movements either up or down. Limit stops are provided at the top and bottom to prevent over-travel. A cam operated safety device prevents dropping if the wire rope breaks. A built-in centrifugal governor can be specified to control the speed of a free falling load. Basic height is 32 ft. with additional heights in 10-ft. steps.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1448

FOTO-FLO* MODEL C PHOTO-COPYING MACHINE

New! Speedier! More Economical!

DAYLIGHT OPERATION NO DARKROOM REQUIRED

Makes up to 5 (18" x 24") Prints a Minute of anything written, printed, drawn or photographed

WRITE DEPT. 53-35 for information showing how FOTO-FLO can speed production and lower photo-copying costs.

*Reg. U. S. Pat. Off.

HALOID THE HALOID COMPANY ROCHESTER 3, NEW YORK

Branch Offices in Principal Cities

Photocopy Papers • Photo-copying Machines • Photographic Papers

If you write maker identify as IEN - 1449

"The Finest Money Can Buy!"

FOR SMOOTHER, LONGER-LASTING PERFORMANCE

Hydraulically Balanced Vanes — Less load on cam ring — low loading characteristics at all operating pressures.

Radially Balanced Rotor — Dual, opposed inlet and exhaust porting — complete radial balance.

Compactly Built — Delivering 7.5 gpm at 2000 psi, this typical Pump/Motor is only 4⅛" wide — only 8" long, including shaft.

Simplified Design — Built of only three rugged, close-coupled components — extra stamina.

Denison Pump/Motors — *ready for either pump or motor use without alterations*— are built for *long continuous* duty at 2000 psi. Vanes have dual sealing edges. Inlet and exhaust porting adjustable to easiest installation. Direction of rotation easily reversed. Pumping capacities from 2.7 to 70 gpm . . . torque ratings from 13 to 257 pound-inches per 100 psi. Write for Pump/Motor Bulletin P-5.

The DENISON Engineering Co. 1150 Dublin Rd., Columbus 16, O.

DENISON HydrOILics PUMP/MOTOR

If you write maker identify as IEN - 1450

SAVE Chrome Plate Your Cutting Tools in Your Own Shop . . . FAST

Chromaster— revolutionary new industrial chrome plating method— already adopted by many leading firms to lengthen tool life, reduce downtime

With the demands on your own machinery more pressing, Chromaster means dollar savings to you. It enables you to increase tool life, salvage worn cutting tools and parts, reduce tool inventories, and lessen machine downtime.

Chromaster is the new industrial chrome plating machine which permits you to conduct your own plating operations, in small space, anywhere in your plant.

Compact, self-contained units can be operated at amazing speed — 3½ minutes for the average job. There's a size Chromaster for every need.

Send today for complete facts on Chromaster.

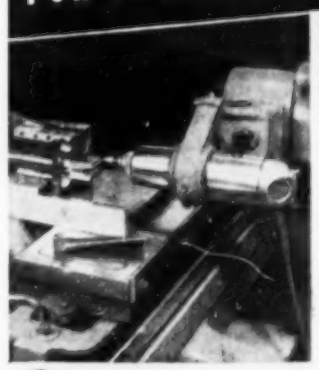
INDUSTRIAL CHROME DIVISION
WARD LEONARD ELECTRIC CO.

Chromaster

33 South Street, Mount Vernon, N. Y.

If you write maker identify as IEN - 1451

LOWEST COST PRECISION FOR TOOL ROOM AND PRODUCTION



ONE PORTABLE MULTI-PURPOSE PRECISE GRINDER-MILLER WITH MACHINE TOOL MOUNT DOES THE WORK OF A SINGLE-PURPOSE MACHINE COSTING 100 TIMES AS MUCH!

Little can be done today to reduce labor and material costs. For substantial savings employ new, better techniques. Mount PRECISE Grinder-Millers on lathes, drill presses, milling machines and other machine tools or use in special production set-ups. ¼ HP; speeds from 20,000 to 6,000 r.p.m.; 115 volts, AC-DC. Ruggedly built for continuous duty. All metal housing; rigid PRECISE quill; sealed micro-precision bearings. *High speeds and accurate PRECISE quill and chuck are ideal for tungsten carbide cutters.* PRECISE will grind, mill or finish any material from soft wood to the hardest alloy steel.

Write FOR NEW CATALOG

PRECISE PRODUCTS CORP., 1326 Clark St., Racine, Wis.

Precise GRINDER-MILLERS

If you write maker identify as IEN - 1452

Investigate the Advantages of H & K PERFORATIONS

—for cleaning, grading, straining and filtering . . . guarding and ventilating . . . acoustical treatment . . . ornamental enclosure, and related problems of product and machine design.

You have a wide selection of patterns to choose from, all accurately perforated. For commercial processing, perforations may be had with as close as ±.0005". Materials include practically all metals and sheet materials such as plastics, fabrikoids, plywood, etc. Ornamental grilles may still be furnished in steel with painted finishes.

Perforated sheets may be furnished rolled, formed, sheared, welded, brazed or otherwise fabricated to your specifications.

Catalog No. 62 tells the "hole" story —write for it!

The Harrington & King PERFORATING Co.

5637 Fillmore Street, Chicago 44, Illinois
114 Liberty Street, New York 6, New York

If you write maker identify as IEN - 1453

LOOKS GOOD, WEARS WELL, PRICED RIGHT!

PIC STEEL UNIONS for Original Equipment

For 150# service Pics are ideal! 100% zinc plated . . . smart looking . . . sturdy. Ends can take heaviest wrenching because they're constructed of steel pipe coupling stock . . . and their uniform flat sides permit speedier installing with open end wrenches. Special wedge-type bronze seat assures tight, safe closure. The zinc plating even includes the threads for top rust protection. The price? Less than a galvanized — no more than a black malleable union!

Write for FREE Samples

DART UNION COMPANY

132 Thurbers Avenue, Providence 5, R. I.

If you write maker identify as IEN - 1454

Protects parts FROM RUST AND DAMAGE *while handling or shipping!*

Plastic Seal forms a skin tight coating that is moisture-proof and air-tight. Strongly resists shock and abrasion. Ideal for bulk shipments — requires less wrapping — reduces cost. Although Plastic Seal is tough it can be easily peeled. Transparency allows instant inspection and identification. Also available in colors for coding.

Write today for price information and free engineering service on production dipping problems.

GLOBE *Imperial Corporation*

2023 Kishwaukee St., Rockford, Illinois

If you write maker identify as IEN - 1455

SNOW PLOW . . Attachment assembly for company's engine driven dump truck

Source: PRIME-MOVER CO.
52 Sampson St., Dept. N, Muscatine, Iowa

For outdoor runways

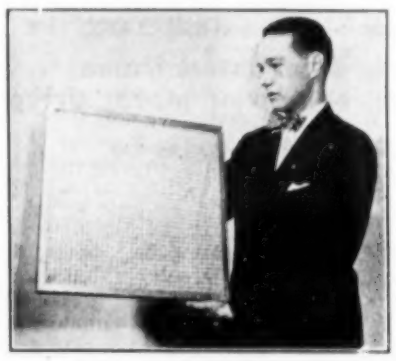
Blade, measuring 50 in. in width, can be set at an angle to either side in this new attachment assembly for the company's engine driven dump truck, previously described IEN-9679-51. While the plow is being employed, the 10 cu. ft. dump bucket on the truck can be loaded with ballast to provide traction. By employing sand as the ballast the operator also has a source for non-skid material that he can sprinkle by hand as he proceeds. The plow can be attached and removed quickly for normal use of the truck with its bucket or either of two interchangeable platforms.

Drive is by a four cycle air cooled Wisconsin engine connected to the front wheels. Operation is at fast walk. Turning radius is 33 inches. Overall width is 31½ inches.

If you write maker identify as IEN - 1456

DUST COLLECTING . . Filter panel employs static to trap dust particles

Source: GOODYEAR TIRE & RUBBER CO.
1142-46 E. Market St., Akron 16, Ohio



No oil or adhesive

Pliotron trade names the company's polyethylene film that is employed in the construction of this new dust collecting filter panel. The film contains a permanent electrostatic charge. It takes on an additional charge when air is forced through it. This results in attracting dust particles, including the finest pollen soot. When the panel becomes loaded, it can be cleaned by rinsing it in clear water and returning it, wet, to service. Four sizes range from 16 by 20 to 20 by 25 inches. Thickness in each available size is 1 inch.

If you write maker identify as IEN - 1457

PRESSES . . Picture book shows steps in hydraulic press making from pattern to freight car

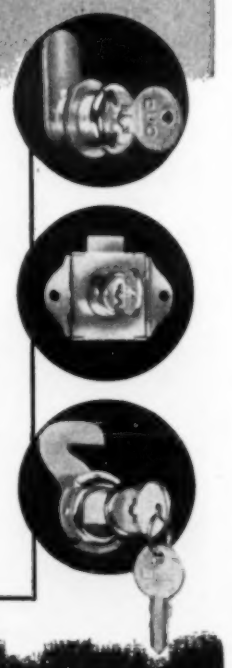
R. D. Wood Co.
52 Public Ledger Bldg., Philadelphia 5, Pa.

Photographic book, 34 pages, has been reissued to coincide with the company's 150th anniversary this year. People and facilities are shown step by step in the making of hydraulic equipment in such activities as pattern making, metal casting, machining, assembly, testing, shipping.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1458

IS THERE A "BEST CHOICE" IN LOCKS?



You bet there is . . . and it's DUO and ILLINOIS locks . . . with hundreds of styles and sizes in cabinet locks for wood or metal installations available for **original equipment** applications.

DUO LOCKS—Finest in lock quality —practically unlimited key specifications —virtually pick-proof—non-duplicatable style keys.

ILLINOIS LOCKS—Economy priced cylinder locks—many key changes—construction avoids failure due to dirt or freezing. Illinois lock engineers are always ready to cooperate with you in working out special locking problems. For complete service, call Illinois first.

ILLINOIS

THE ILLINOIS LOCK COMPANY

808 S. ADA ST. • CHICAGO 7, ILL.

If you write maker identify as IEN - 1459

How FOXBORO multiplies storage space

Keeping materials handling efficiency high in narrow 58" aisles at The Foxboro Company, Foxboro, Mass., is a job for *one particular* truck—the Lewis-Shepard Electric JackStacker. Officials at Foxboro report that the JackStacker was the only truck which could meet their specifications.

Why not mechanize handling in your plant where aisle space is limited—take a long look at the JackStacker . . . it'll get into the tightest places with ease . . . right angle stacks in less than 6 ft. aisles.

Prove for yourself the greater dependability and economy of L-S equipment. Ask for Catalog, "Proof Folders" and Electric Truck Comparison Chart.

LEWIS-SHEPARD Products, Inc.
333 Walnut St., Watertown 72, Mass.

The "MASTER" Line

Nationwide Service — See "Trucks, Industrial" in your Yellow Phone Book

If you write maker identify as IEN - 1460

LOW COST BOOST PUMP

Air operated hydraulic boost pump capable of output fluid pressures to 50,000 PSI. from 100 to 150 PSI. plant air supply.

Operates *automatically* on the principle of differential areas. For oil or water service. Broadly applicable for a wide variety of useful work where low volume output at high pressures is the requirement, such as static testing, powering presses for metal forming, shearing, clamping, etc. Thousands in use. Simple. Reliable. Inexpensive. Special models for corrosive service. Complete power packages also available.

Measures 8¼" wide x 9⅝" deep.

SIX STANDARD MODELS FOR IMMEDIATE DELIVERY

Assembly No.	Ratio	Maximum Fluid Pressure	Prices, F.O.B. Gardena, Calif.
216-C- 35	35:1	3,500 PSI.	$173.25
216-C- 60	60:1	6,000 PSI.	$173.25
216-C-100	100:1	10,000 PSI.	$173.25
216-C-150	150:1	15,000 PSI.	$194.50
216-C-200	200:1	20,000 PSI.	$225.00
216-C-300	300:1	30,000 PSI.	$289.50

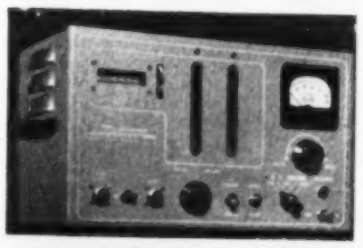
Higher pressure models (to 50,000 PSI.) available on special order. Lower pressure models (widely used for fluid transfer applications) available on special order in ratios of 1:1, 4:1, 10:1, and 20:1.

SPRAGUE ENGINEERING & SALES CORP.

Budlong & 135th St., Gardena, Calif.

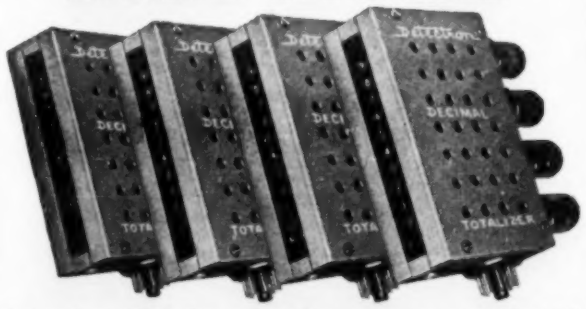
If you write maker identify as IEN - 1461

Detectron SCALERS



The DS-606 Poli-Scaler is a versatile laboratory scaler easily adaptable to GM and scintillation counting and frequency checks. Pulse height discriminator from 0 to 100 volts; positive or negative pulses. Has a high voltage power supply variable in 1-step from 0 to 2.5 kv. The power can supply either the GM input or can be used as a power source for accessory equipment.

DECIMAL TOTALIZERS



Better heat dissipation assures greater accuracy, stability and dependability. Standard octal mounting plugs assure easy adaptation to most equipment. Direct readings of astronomical proportions are obtainable by cascading several units together. Each unit uses four No. 5693 computer tubes and careful selection of critical parts insure maximum precision. Two models. TU-9 counts 50,000 per second; TU-100 counts 100,000 per second.

Write for folder 75

DETECTRON CO. 5631 Cahuenga Blvd., No. Hollywood, Calif.

If you write maker identify as **IEN - 1462**

INTERCHANGEABLE COUNTERBORE SETS

Continental Interchangeable Counterbore sets give you a wide variety of cutting tools in a compact, convenient form. Three sets are available, for the large or small toolroom. Each set features the famous Continental indestructible drive that will not stick, will not break, and is always hand detachable. Full details are given in Bulletin B 47-37. Send for your copy.

CONTINENTAL TOOL WORKS
Division of Ex-Cell-O Corporation
Detroit 32, Michigan

CTW

If you write maker identify as **IEN - 1463**

ELECTRIC FEEDRAIL®

—for maximum safety, convenience, adaptability

● The FEEDRAIL system of electrification is ideal for powering portable tools on both moving and stationary production lines. It provides overhead power outlets that give your tools the full run of the production line or any part of it. And it means short electric power cables up out of the way. It also gives your production lines maximum versatility, because you change tools simply by disconnecting one and plugging in another. With ELECTRIC FEEDRAIL you're set for today's production — and tomorrow's. Without obligation, a field representative will call and give you the facts about FEEDRAIL for your needs. There's one near you.

Write for descriptive literature which gives you complete details about ELECTRIC FEEDRAIL including capacities, applications, installations, planning and the preparation of specifications.

Sold by leading electrical distributors

52-4A Rev.

ELECTRIC FEEDRAIL®

Never Becomes Obsolete
FEEDRAIL CORPORATION
Subsidiary of Russell & Stall Company, Inc.
125 BARCLAY STREET · NEW YORK 7, N. Y.

SPECIALLY QUALIFIED REPRESENTATIVES IN PRINCIPAL CITIES

If you write maker identify as **IEN - 1465**

PACKAGING . . Polyethylene bags and liners seal and protect products

Source: PLASTIC PACKAGING CO.
728-32 N. Franklin St., Chicago 10, Ill.

Made to order

The company has installed special patented equipment on which it is prepared to manufacture polyethylene plastic bags and liners for use alone, or as a liner for paper and other type of bags, for solid or corrugated cartons and for fiber, metal or wood drums and barrels. The bag is available in specified sizes. It is made in the form of a sleeve by an extrusion process and is closed across one end in a sealing design that is water and air tight and exceeds the strength of the bag itself.

The film will not shatter, crack, split. It is chemically inert, odorless, tasteless and will not adhere to the products it packages. It will contain liquids as well as dry products when it is sealed at both ends.

If you write maker identify as **IEN - 1466**

CORROSION PROOFING . . Plastic tank liners in specified dimensions

Source: AMERICAN AGILE CORP.
P. O. Box 168-A, Bedford, Ohio

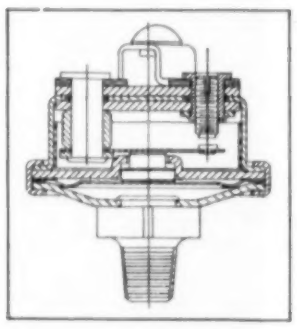
Made to fit user's tank

Agilene, a polyethylene plastic, or Agilide, an unplasticized polyvinyl chloride, is employed by the company in a new line of welded tank liners. Each liner is fabricated to specified dimensions and is supplied with drain and overflows including the pipe flanges, fittings and valves made of the plastic for connection into existing pipe lines. Both materials are chemically inert. Material thickness is to 1 inch. The liner can be fabricated at the company's plant or at the final installation.

If you write maker identify as **IEN - 1467**

SWITCH . . Pressure operated for signal and control circuits

Source: JOHN W. HOBBS CORP.
2022-26 Yale Blvd., Springfield, Ill.



Sealed assembly

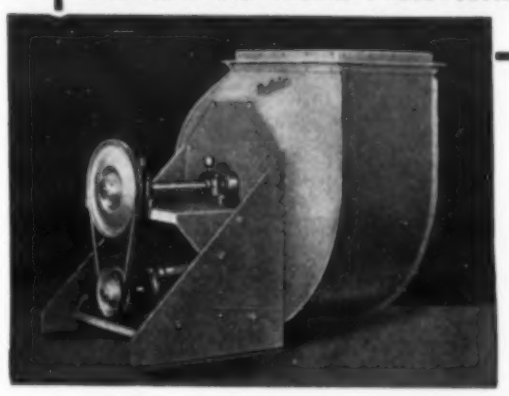
Pressure acts upward through a ⅛ or ¼-in. pipe connection in the base of this recently improved switch to move a diaphragm. Upward movement of the diaphragm operates a plunger to close a single-pole single-throw contact. The switch is adjusted normally to close a circuit at 3 to 6 pounds. It is pressure tested at 150 pounds. Rating is sufficient to handle a normal control circuit. Overall dimensions are about 1¾ in. in greatest diameter by 2 in. in height. List price of the new switch is $3.60.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1468**

If you write maker identify as **IEN - 1469**

For Light-Duty Ventilation
THERE'S NO MORE PRACTICAL FAN



500 cfm to 20,000 at ¼" s.p.

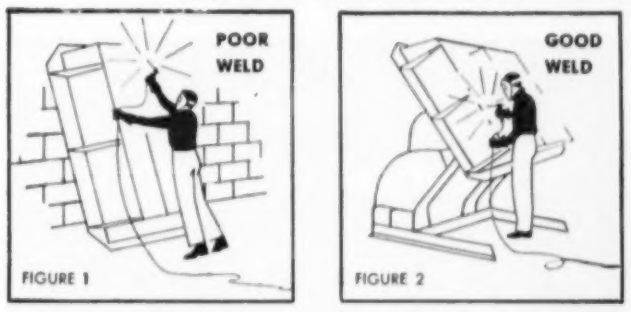
"Buffalo"

BELTED VENT SET

It's light—requires no expensive foundation—can be installed indoors or outdoors—cannot be overloaded, regardless of system pressure—and its capacity may be easily changed on the job by simple sheave changes. Also, it's highly efficient and very quiet with its specially shaped housing scroll and dynamically balanced rotor. You couldn't find a more satisfactory and practical fan for your light-duty ventilation, up to 20,000 cfm! WRITE FOR DETAILS!

BUFFALO FORGE COMPANY
496 Broadway Buffalo, N. Y.
Publishers of "FAN ENGINEERING" HANDBOOK
Canadian Blower & Forge Co., Ltd., Kitchener, Ontario
Sales Representatives in all Principal Cities

If you write maker identify as **IEN - 1470**



How Worthington Welding Positioners help your welders produce BETTER WELDS

When your welder has to climb over, prop, or flop the work, he's wasting time and can only obtain good downhand welding over a limited area (Figure 1). With a Worthington Welding Positioner, the work is quickly tilted or rotated automatically into position for correct downhand welding. Write for Bulletin 210D. Worthington Corporation, Plainfield, N. J.

Y.2.5

WORTHINGTON
Welding Positioners—Turning Rolls

If you write maker identify as **IEN - 1471**

SAVE MAN HOURS!

HEIN-WERNER C-21
Push and Pull "Jackit"

Eliminate the need for crews, helpers, or complicated set-ups to handle heavy-duty bending, pressing, lifting, clamping, moving, and straightening operations. One man can do all these jobs faster, easier, and better when equipped with a Hein-Werner C-21 Push and Pull "JacKit."

The C-21 includes a 20-ton "Push and Pull" Hydraulic Jack and 15 carefully selected attachments packed in a sturdy wooden chest. Available in models of 4, 10, and 20 tons capacity complete in chest or rollaway metal stand. See your industrial supply distributor or write us.

HEIN-WERNER CORPORATION
Waukesha·Wis.

Hein-Werner HYDRAULIC JACKS

If you write maker identify as IEN - 1472

JENKINS VALVES for Safety and Economy in L.P.G. SERVICES

Fig. 506 BRONZE GLOBE for L.P.G. SERVICE 400 lbs. O.W.G.

Check these special design features

- **Extra heavy, reinforced body** — takes all ordinary pipe strains; provides a safety factor far above any L.P.G. service needs.
- **Crowned seat** — insures positive tightness, meets N.B.F.U. test of 500 p.s.i. under seat when valve is closed.
- **Improved composition disc** — meets every test of L.P.G. service.
- **Deeper packing box** — and spiral, lubricated packing material permit spindle to turn with minimum friction.
- **All other parts specifically designed** and proportioned to meet rigorous requirements of critical L.P.G. service.

Construction features of Jenkins Fig. 507 Check and Fig. 508 Angle L.P.G. Valves same as for above.

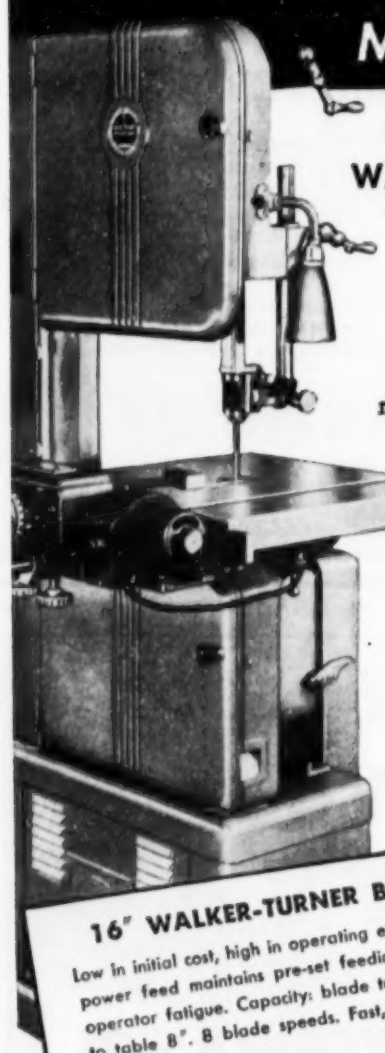
Ask your Jenkins Distributor for the new Jenkins L.P.G. Valve folder, or write: Jenkins Bros., 100 Park Ave., New York 17.

LOOK FOR THIS JENKINS TRADE MARK DIAMOND MARK

JENKINS SINCE 1864 **VALVES**

If you write maker identify as IEN - 1473

Designed for those who need LIGHT-HEAVYWEIGHT Machines



16" and 14" WALKER-TURNER Band Saws

For jobs where neither the capacity nor expense of a heavy industrial machine is warranted, and a "hobby machine" would be inadequate, Walker-Turner has engineered a special class of light-heavyweight Band Saws. Use space below to write for complete information.

SOLD ONLY THROUGH TRAINED INDUSTRIAL DISTRIBUTORS

16" WALKER-TURNER BAND SAW

Low in initial cost, high in operating efficiency. Automatic power feed maintains pre-set feeding pressure, lessens operator fatigue. Capacity: blade to frame 16", guide to table 8". 8 blade speeds. Fast, accurate, safe, and easy to handle.

WALKER-TURNER DIVISION • KEARNEY AND TRECKER CORPORATION • PLAINFIELD, N. J.

DRILL PRESSES • RADIAL DRILLS • TILTING ARBOR SAWS
BELT and DISC SURFACERS • METAL-CUTTING BAND SAWS
LATHES • SPINDLE SHAPERS • JOINTERS

Use this space

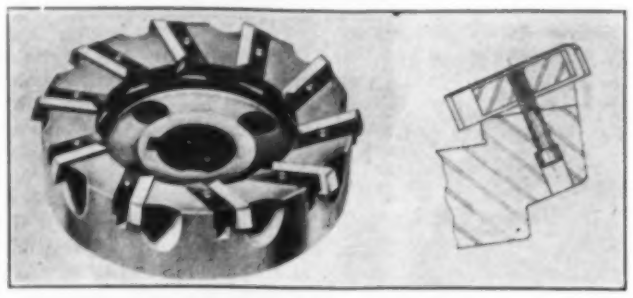
to write for full details and specifications. Walker-Turner Division, Kearney & Trecker Corp. Dept. IE-2, Plainfield, N. J.

(Please write your name and address in margin of page)

If you write maker identify as IEN - 1475

MILLING . . Carbide tooth cutter employs threaded wedges, 4 to 14 in.

Source: SUPER TOOL CO.
21652 Hoover Road, Detroit 13, Mich.



Solid interchangeable carbide blades

Reversible teeth, interchangeable in right hand and left hand cutters, are secured in radial position by wedges that ride above slots in the body of this new Type IBH milling cutter. The wedges are threaded for the anchoring bolts that locate in the body. Any damage is absorbed by blades and wedges. The body can be refitted to resume work quickly, in the event of an accident, because of this threaded wedge.

The cutter is available in six sizes between 4 and 14 in. in diameter. It is made in right and left hand designs and can be specified in special shapes.

If you write maker identify as IEN - 1476

COMMUNICATING . . Remote control for radio transmitter and receiver

Source: RADIO CORP. OF AMERICA
1941 Front & Cooper Sts., Camden 2, N. J.

For two-way talk

Type CC-8A is a new remote control assembly to actuate a centrally located transmitter and receiver. It is designed for use with mobile radio communicating equipment of either the company's Carfone or Fleetfone installations. It can be employed also with other mobile equipment in the 30 to 50 or 152 to 174 megacycle bands.

The new assembly consists of a speech amplifier, power supply, speaker amplifier, loudspeaker, and a set of controls. It connects with the transmitter and receiver over a single pair of telephone wires from as far away as 10 miles. Assembly is in a rectangular housing measuring 13½ by 6 by 9½ inches. Weight is 19 pounds. Operation is on 110 volt 60 cycle ac. with input at 68 watts.

If you write maker identify as IEN - 1477

STEEL . . Reference tables in booklet contain weights and conversions dealing with tool steel

A. Milne & Co.
743-47 Washington St., New York 14, N. Y.

"Reference Tables," new 8-page booklet available on letterhead request, includes a hardness conversion table, weights of steel bars, decimal equivalents of inch fractions, temperature conversion tables from minus 459.4 to plus 5,432 deg. F.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1478

FOR THESE *Extras*

LONGER SERVICE
LESS MAINTENANCE
HIGHER PERFORMANCE

use STAINLESS STEEL FLOATS

YOU can solve virtually all your float problems by standardizing on Stainless Steel Floats from Chicago Float Works. You get longer service and less maintenance because Stainless Steel Floats resist corrosion and withstand high temperatures and pressures. Extreme strength insures them against collapsing and they always respond perfectly to level fluctuations because of permanently high buoyancy. Install our high quality Stainless Steel Floats and be sure of long, dependable operation!

WRITE FOR FREE CATALOG

This illustrated catalog gives complete details on sizes, shapes, spud connections, and engineering data on Chicago's complete line of standard or special floats.

CHICAGO FLOAT WORKS, INC.
2340 S. Western Ave., Chicago 8, Illinois

If you write maker identify as IEN - 1479

WICKWIRE ROPE SLINGS

in braided and single part construction

Braided slings made by Wickwire give you these advantages:

- Extreme flexibility
- Non-kinking properties
- Better conformation to irregular surfaces
- More even load distribution
- Will not take a permanent set

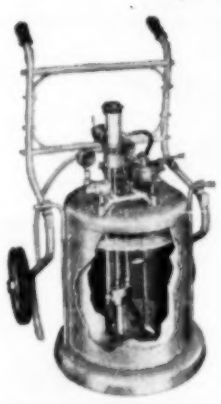
Write or call our nearest sales office for full details.

THE COLORADO FUEL AND IRON CORP.—Abilene (Tex.) • Denver Houston • Odessa (Tex.) • Phoenix • Salt Lake City • Tulsa
THE CALIFORNIA WIRE CLOTH CORP.—Los Angeles • Oakland Portland • San Francisco • Seattle • Spokane
WICKWIRE SPENCER STEEL DIVISION—Boston • Buffalo • Chattanooga Chicago • Detroit • Emlenton (Pa.) • Philadelphia • New York

WICKWIRE ROPE
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 1480

New Paint Pump



HANDLES HEAVIER PAINTS AND COATINGS

- Portable for Maintenance Painting
- Stationary for Production Spray Lines

The "one coat" era is with us. The trend in industry today is toward a single application of heavier, thicker paints and coatings. *And now* . . . you can get a new heavy-duty pump that *completely obsoletes* any previous methods of applying these materials!

This new 10-gallon Heavy-Duty Graco Paintmaster features a rugged reciprocating double-action pump, air-operated. A built-in agitator keeps paint or other materials constantly in perfect suspension. This Paintmaster will supply more than enough paint for 8 spray guns!

You can disengage the Sta-Level truck easily (no pins or bolts) for stationary operation to supply production lines. New Paintmaster dispenses directly from 5 or 10-gallon original containers.

GRAY COMPANY, INC.
214 Graco Square, Minneapolis 13, Minn.

Write today for Spec Sheet No. 15.

NEW GRACO Heavy-Duty *Paintmaster*

REGIONAL OFFICES:
NEW YORK
PHILADELPHIA
DETROIT
ATLANTA
CHICAGO
SAN FRANCISCO

If you write maker identify as IEN - 1481

For Production Stud Setting, Drilling, Tapping and Assembly

Automatic Self-Opening Stud Driver — 100 Series

Automatic take-up for wear on jaws. Affords accurate maintenance of projection heights. Inexpensive method of clutch renewal gives double wear at half the cost.

Titan-Kirkland Combination Stud Driver and Puller

Incorporates roll action to grip as little as ½" of unthreaded body of stud. Made in T-Handle, Ratchet, and Power styles.

Solid Type Stud Driver

Built for rugged use on heavy engines. Equipped with Titan Design, Loose Pressure Plunger. Definitely stands up under vibration encountered when using an impact wrench for motive power.

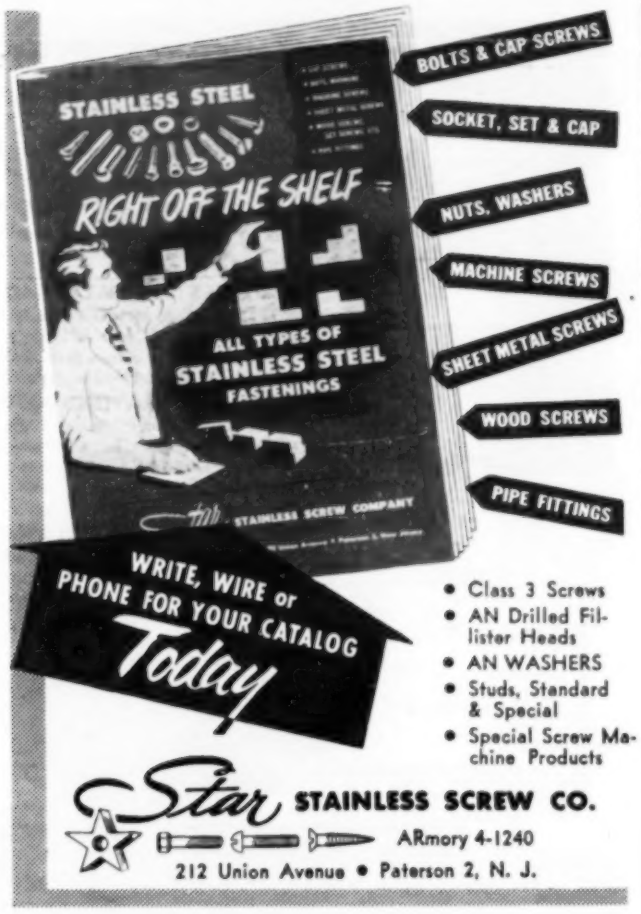
Titan Quick-Change Chuck

Affords closest possible center to center set-ups, with quick change and positive drive included. Exclusive Slip Ring under tension a distinct advantage in turret lathe application.

WRITE FOR LITERATURE TODAY

TITAN TOOL CO.
Production Tools
52 Main St., FAIRVIEW (Erie County), PA.

If you write maker identify as IEN - 1482

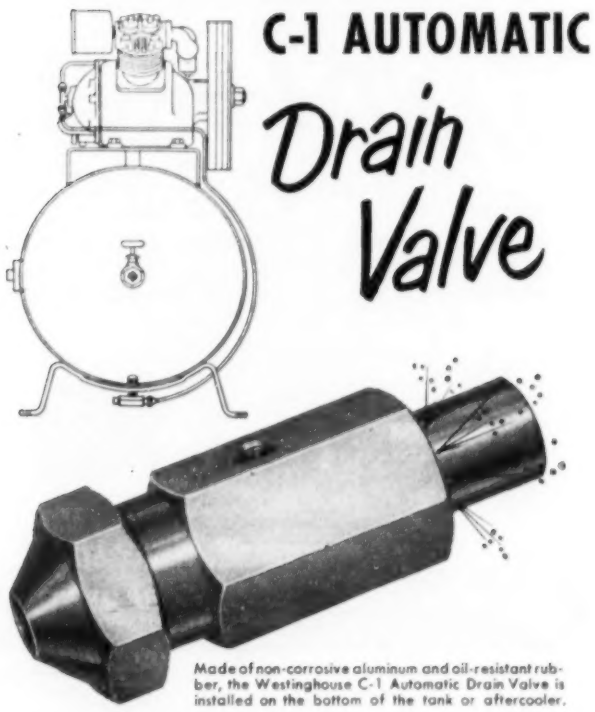


- Class 3 Screws
- AN Drilled Fillister Heads
- AN WASHERS
- Studs, Standard & Special
- Special Screw Machine Products

Star STAINLESS SCREW CO.
ARmory 4-1240
212 Union Avenue • Paterson 2, N. J.

If you write maker identify as IEN - 1483

Keep water out of your air tank with this new WESTINGHOUSE C-1 AUTOMATIC *Drain Valve*



Made of non-corrosive aluminum and oil-resistant rubber, the Westinghouse C-1 Automatic Drain Valve is installed on the bottom of the tank or aftercooler.

• Let the new Westinghouse C-1 Automatic Drain Valve take over the job of keeping water out of your air tank. It's completely automatic in operation . . . there's no day to day manual draining, or, worse, no forgetting to drain. It eliminates the need for drip pans, drain lines or sewage connections.

Every time your air compressor starts, stops or unloads, the C-1 Automatic Drain Valve goes into action. Its piston —the only moving part—moves between the extended and retracted position, expelling collected water into the air as vapor.

Air pressure from the unloader pipe of your air compressor operates this Drain Valve which may be installed on the tank or aftercooler.

Everything you need for quick, easy installation—including all fittings and tubing—is furnished in a complete kit. The C-1 Automatic Drain Valve is available for all models of Westinghouse Air Compressors and fits most units of other makes as well (lever type unloaders excepted).

A water-free air supply is a must on most types of pneumatic equipment; it will help you get longer, trouble-free service from every type. Get complete information on the Westinghouse C-1 Automatic Drain Valve from your Westinghouse Air Compressor dealer.

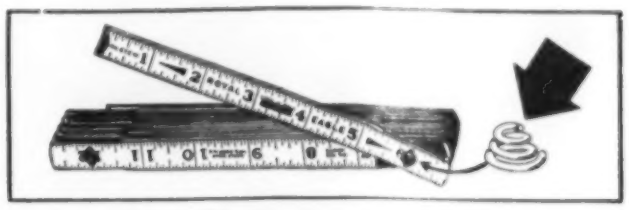
Westinghouse Air Brake COMPANY
INDUSTRIAL PRODUCTS DIVISION — WILMERDING, PENNSYLVANIA

Factory Branch: EMERYVILLE, CALIF.
Distributors throughout the United States . . .
Consult your Classified Directory. Distributed in Canada by:
Canadian Westinghouse Co. Ltd., Hamilton, Ontario.

If you write maker identify as IEN - 1485

GAGE . . Wood folding rule employs coil springs in the joints

Source: EAGLE RULE MFG. CORP.
508-12 Hunts Point Ave., New York 59, N. Y.



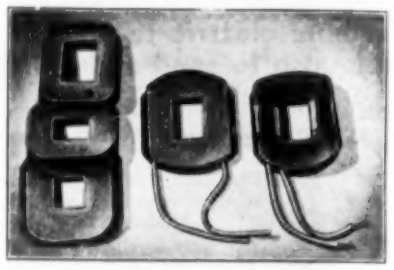
$1.25 to $2.20

A coil spring in each of the joints of this new wood folding rule keeps its joint in firm snap action over a long service period. Tests indicate the life span at better than 75,000 cycles. The rule is made in 4, 6 and 8-ft. lengths.

If you write maker identify as IEN - 1486

WINDING . . Paper bobbin, specified shapes for motor field coils

Source: PRECISION PAPER TUBE CO.
2061 W. Charleston St., Chicago 47, Ill.



For production use

Flexiform trade names a new paper bobbin with flexible flanges to eliminate taping operations in winding motor field coils. It is available in specified shapes and sizes and is manufactured on automatic equipment. The flanges are flexible rope paper and are secured to the core which is made of dielectric kraft.

If you write maker identify as IEN - 1487

LADDER . . Aluminum platform unit for stock rooms, 4 to 8 ft. height

Source: METALLIC LADDER MFG. CORP.
6 Sheldon St., Randolph, N. Y.

One little girl can—

Casters under the rear legs of this new platform ladder provide for movement from one location to another. Corrugated rubber safety shoes prevent slipping when the front legs are placed down upon the floor. The working platform is surfaced against the danger of slipping. The aluminum steps are ribbed and braced. A removable guard rail is included at the rear. The ladder is shipped knocked down for assembly on the job.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1488

A PAID NEWS ADVERTISEMENT BY SUPERIOR TUBE COMPANY

SPECIAL FINISH OF CARBON STEEL TUBE SOLVES MANUFACTURING PROBLEM

SMOOTH surface, free from pits and scratches, plus rigidity, were prime requirements of a manufacturer of telescopic sights for sporting and target rifles. Like most Superior customers they got exactly what they sought without the need for specifying "premium" tubing. Superior experience backed by highly developed production equipment and extensive research and testing facilities helped solve this production problem.

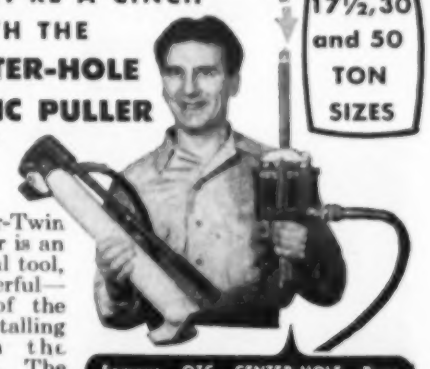
YOU, TOO, may have a problem involving the use or application of fine small tubing. Superior can help you find the solution. Check your needs against our production of tubing in all analyses from .010" to 5/8" O.D. and in certain analyses (.035" max. wall) up to 1 3/8" O.D. For information write today.

SUPERIOR TUBE COMPANY
2016 Germantown Avenue
Norristown, Pennsylvania

If you write maker identify as IEN - 1489

TOUGH JOBS! THEY'RE A CINCH WITH THE OTC CENTER-HOLE HYDRAULIC PULLER

17½, 30 and 50 TON SIZES



Famous OTC CENTER-HOLE Ram permits fast, easy adjustment to the work and interchange from push-puller to sleeve puller to bench press

The OTC Power-Twin Hydraulic Puller is an ideal, economical tool, compact, powerful—handles 95% of the pulling and installing operations in the average shop. The Power-Twin may be detached from press —used as portable ram—speeds up pulling and installing jobs 75%, eliminates torque—remote control provides safety

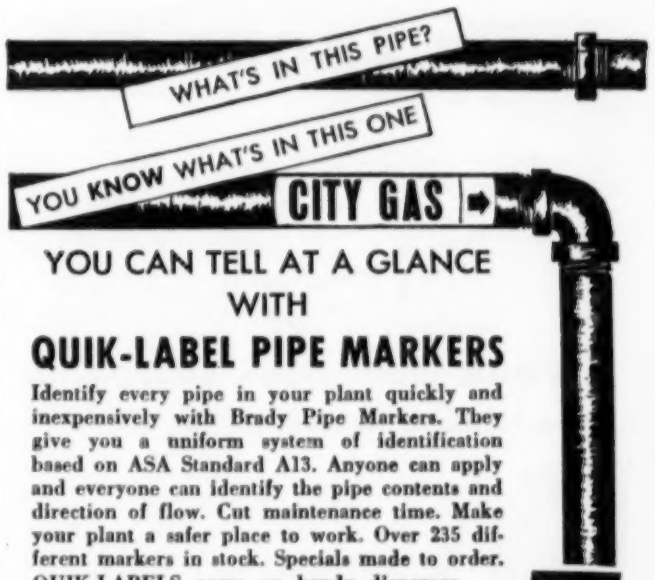
A complete range and variety of Pullers, Adapters and Attachments are available to pull or install sleeves, bearings, races, gears, pinions, couplings, etc.

Amazingly efficient combination of Portable Pedestal Press and 17½ ton Power-Twin Hydraulic Puller. Every shop will find this unit a must . . . first few jobs pay for it in time, tools and money saved. Move it where you want it . . . it's portable.

See your OTC jobber or write us . . . today.

OWATONNA TOOL CO.
371 CEDAR ST. OWATONNA, MINN.

If you write maker identify as IEN - 1490



YOU CAN TELL AT A GLANCE WITH

QUIK-LABEL PIPE MARKERS

Identify every pipe in your plant quickly and inexpensively with Brady Pipe Markers. They give you a uniform system of identification based on ASA Standard A13. Anyone can apply and everyone can identify the pipe contents and direction of flow. Cut maintenance time. Make your plant a safer place to work. Over 235 different markers in stock. Specials made to order. QUIK-LABELS come on handy dispenser cards. They are printed in large black letters on approved ASA background colors. Applied in a jiffy — they stick without moistening. Use indoors or outdoors. Cost only a few cents per marker.

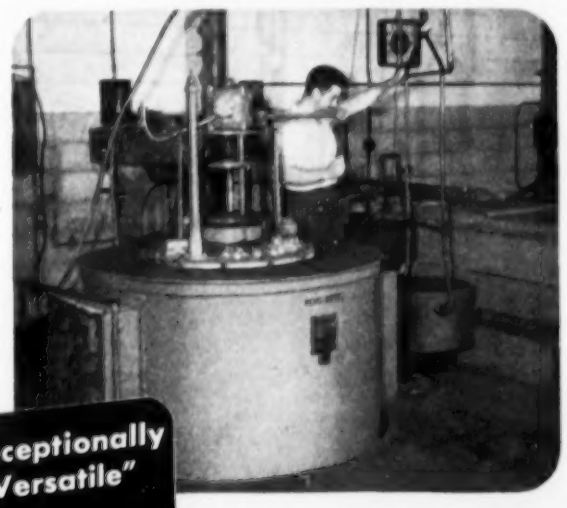
WRITE FOR Free SAMPLES AND USEFUL CATALOG

DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

MANUFACTURERS OF SELF-STICKING PRODUCTS
WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED ROLL TAPE · MASKS & STENCILS

W.H. BRADY COMPANY
734 W. GLENDALE, MILWAUKEE, WISCONSIN

If you write maker identify as IEN - 1491



"Exceptionally Versatile" . . . that's why Pesco bought HEVI DUTY FURNACES

"We use our Hevi Duty Vertical Retort Furnaces for carburizing, nitriding, hardening, and normalizing parts for jet engine pumps," says Pesco Products Company. Operating and maintenance costs are at a minimum with these Hevi Duty Furnaces.

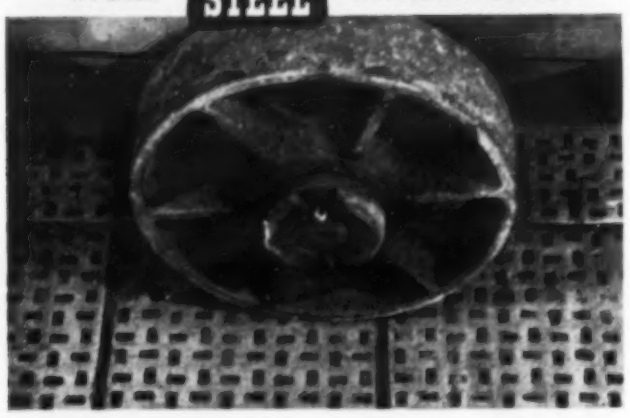
Write for Bulletin HD-646

HEVI-DUTY

HEVI DUTY ELECTRIC COMPANY
MILWAUKEE 1, WISCONSIN
Heat Treating Furnaces . . . Electric Exclusively
Dry Type Transformers — *Constant Current Regulators*

If you write maker identify as IEN - 1492

Now Make Floors Last Longer with ACME STEEL Floor Plate

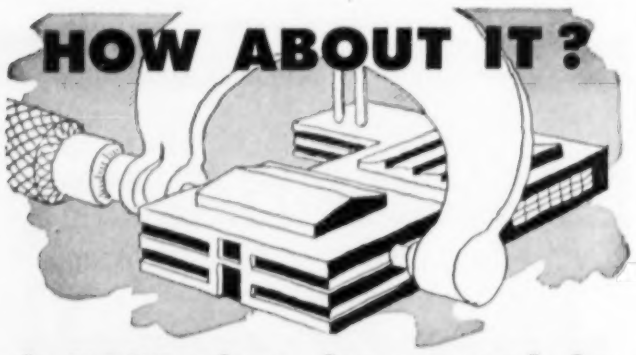


Here's the economical, long-lasting, commercially proven reinforcement for concrete floor surfaces. Each Acme Steel Floor Plate protects one square foot of floor area, anchored to concrete by 100 barbed prongs. Plate cannot work loose, weave or rattle. No cutting or waste in installation. Compact, easy to handle. Provides rugged protection, longer floor life, safe floor surface for aisles, loading docks, ramps, stock rooms, warehouses. For full details, write Dept. IEN-23-F.

ACME STEEL COMPANY
2840 Archer Avenue, Chicago 8, Illinois

If you write maker identify as IEN - 1493

HOW ABOUT IT?



is YOUR plant clean enough for precision defense production?

Model 218

Don't sabotage your plant facilities with dirt and debris. Clean plants measure up to defense production standards.

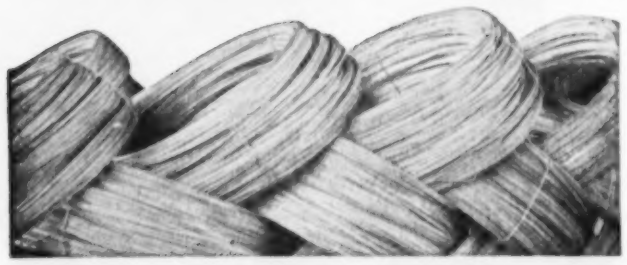
Send for important Doyle Vac-It information today. There's no obligation.

Doyle VACUUM CLEANER CO.
2235 Stevens St., S. W. Grand Rapids 7, Michigan

If you write maker identify as IEN - 1494

PRODUCT-PROVED WIRE

CONTINENTAL STEEL CORP. STEEL CONTINENTAL WIRE KOKOMO, IND.



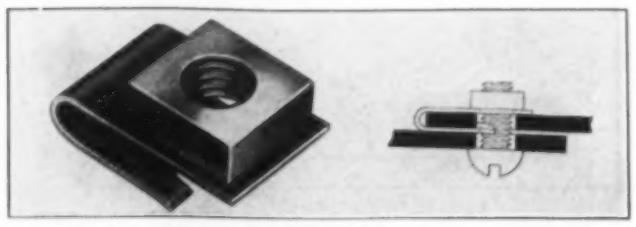
● The worth of Continental wire has been *proved* in the products of hundreds of leading manufacturers. Continental wire is uniform in temper, uniform in coating. Whether your need is for a rust-resistant wire that can stand up under difficult forming operations . . . or for a shaped wire to provide smarter-looking, longer-lasting trim . . . Continental wire can help you build a better, more profitable product. Write Continental at Kokomo.

CONTINENTAL STEEL CORPORATION

If you write maker identify as IEN - 1495

FASTENING . . Nut clip particularly for panel assembly

Source: PRESTOLE CORP.
1325 Miami St., Toledo 5, Ohio



Holds nut in assembly position

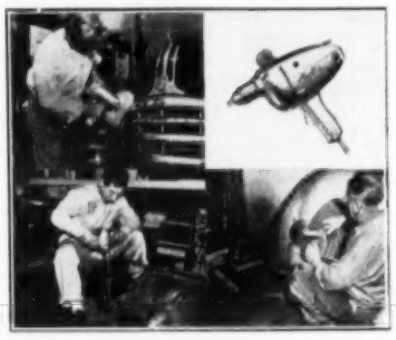
Series 751 is a new steel clip with a nut and locking prongs. It has been designed to apply on the edge of a sheet metal panel for assembly purposes, as shown in the illustration. A screw is applied through clearance holes in the two panels being brought together. It is turned into the nut until the locking prongs bite into the metal surface.

Six nut sizes range from 10/24 to ⅜-in. 24. Inside clip length is ⅞ to 1⅜ inches. Width is ⅝ inch. The material in the clip is 0.035-in. tempered steel, with phosphate coat and oil finish in standard design.

If you write maker identify as IEN - 1496

DRILLING . . Portable electric tool, available also to sand and polish

Source: MALL TOOL CO.
7725 S. Chicago Ave., Chicago 19, Ill.



Utility design

Model 127 is a new unit in the company's MallDrill line of portable electric tools with a universal motor in an aluminum housing. The assembly includes self-lubricated bearings, a geared chuck, built-in trigger type switch and contoured handles. Spindle speed is standard at 500 rpm. The drill is equipped with a 10-ft. length of three conductor rubber covered cord and a plug.

The same tool, in Model 127PS, omits the chuck and adds a 7-in. backing pad with a 7-in. sheep wool bonnet, three abrasive discs and an adaptor for sanding and polishing.

If you write maker identify as IEN - 1497

WELDING . . Procedures and materials for welding metals from aluminum to manganese steel

Lincoln Electric Co.
22803 St. Clair Ave., Cleveland 17, Ohio

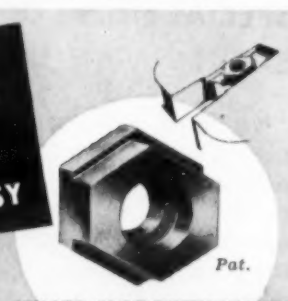
New 142-page book, "Weldability of Metals", is a direct reprint of Chapter 2 from the company's 1,200-page Procedure Handbook. It lists at 50 cents. It covers choice of steels for best weldability, effect of heat, AWS specifications, procedures for welding mild steel, low alloys, nickel alloys, copper, cast iron, aluminum, manganese steel, hard facing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1498

VLIER FIXTURE KEYS KEEP IDLE MACHINES BUSY

Vlier Multi-Dimensional Fixture Keys are simple, counter-bored hex or square units, milled to different cross dimensions and accurate to ±.0005". When attached to fixtures, these keys allow them to be quickly and accurately positioned on idle machines without expensive rework time. Up to ten combinations of sizes. Dimensions remain accurate. Available in 2 types, Milled Slot and Reamed Hole.

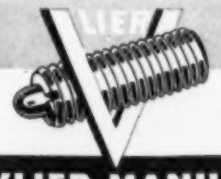


Pat.

MILLED SLOT FIXTURE KEY

Pat. Pend.

REAMED HOLE FIXTURE KEY

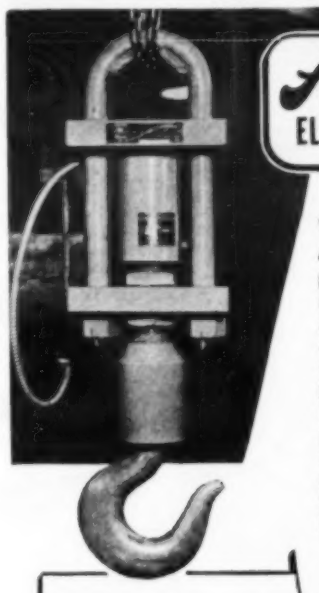


Send for Catalog No. 56 giving full details.

VLIER MANUFACTURING CO.
4552 BEVERLY BLVD., LOS ANGELES 4, CALIF.
Manufacturers of Spring Plungers, Torque Thumb Screws, Toggle Pads, Spring Stops.

If you write maker identify as IEN - 1499

Ametron ELECTRONIC CRANE SCALE



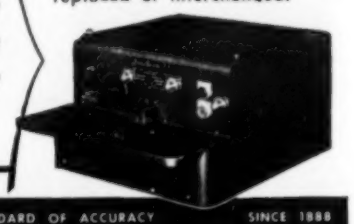
for heavy industrial weighing and remote recording

REDUCES INSTALLATION COSTS: Entire assembly ready to attach to crane or hoist. Only a cable connection is run from Baldwin Load Cell to remote recorder.

REDUCES OPERATING COSTS: Great savings in time and manpower are possible because weighing and transporting operations are combined. Scale is easily removed from crane whenever desired.

REDUCES MAINTENANCE COSTS: The only element subjected to weight is the sturdy load cell, which can be easily replaced or interchanged.

Remote Recorder prints exact weight on tape, ticket or cards.



Write for free Ametron Brochure S-2

THE STANDARD OF ACCURACY SINCE 1888
STREETER-AMET COMPANY
4101 N. RAVENSWOOD AVENUE • CHICAGO 13, ILLINOIS
Branches in Pittsburgh, Pa. and Birmingham, Ala.

If you write maker identify as IEN - 1500

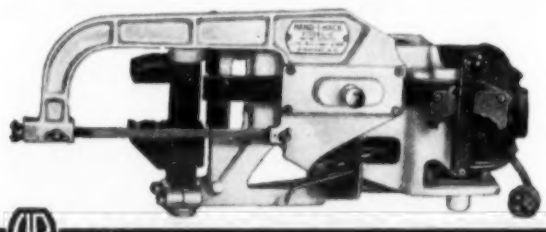
NO MORE hacksawing drudgery that everybody hates.

NOW! HAND-I-HACK*

*Trade Mark Reg. U. S. Pat. Off.

PORTABLE POWER HACK SAW

Hand-I-Hack will eliminate this drudgery. It's light—easily carried to the job. It will work in any position. It will pay for itself quickly in labor saving and broken blade costs alone. Capacity 3" x 3". Write for literature.



Lipe-ROLLWAY CORPORATION
Manufacturers of Automotive Clutches and Machine Tools
812 Emerson Ave., Syracuse 1, N. Y.

If you write maker identify as IEN - 1501

SHORT RUN STAMPINGS

DESCRIBED IN NEW CATALOG No. 718

New catalog describes HPL's "know-how" which can save up to 80% of conventional tooling costs.

Facilities for producing stampings in runs of 25 to 25,000 pieces in various shapes and materials are described and shown. **HPL** is making this attractive four-page catalog available to production, purchasing and management personnel to assist them with their stamping problems. Catalog No. 718 will be sent to you upon receipt of publication or letterhead request.

1049-HPL

HPL Manufacturing Co.
15175 MILES AVENUE • CLEVELAND 28, OHIO

If you write maker identify as IEN - 1502

PLUMBERS & HEATING MEN—DON'T MISS THIS: Mutual's field proven Propane Furnace melts 60 pounds of lead in 12 minutes. Mutual Propane Furnaces and Torches are hotter, faster, safer. You get the job done better and quicker with fewer man hours. No pumping, priming or waiting. Won't blow out. No smoke. Light weight. Ideal for heavy duty preheating and close melting. Blow torch and soldering iron can be attached to Propane tank hose.

Mutual High Speed Torches available in broad flame or pointed flame. Reduce excessive labor costs. Use Mutual Torches and Furnaces for the most efficient, cleanest, portable fuel known.

Send for free Mutual catalog and price list.

*Liquid Petroleum Gas

If you write maker identify as IEN - 1503

PROTECT YOUR FLOORS

As you can see, floors are expensive! So it makes good sense to preserve them with regular, planned care.

How can you do it?

With West's simple, proven FLOOR PRESERVATION PLAN. (1) *Cleaning* — remove all dirt without harming floors (2) *Sealing* — fill the pores. Provide a protective coating (3) *Maintaining* — put on a tough, anti-slip floor wax.

The West Plan offers you more than 20 proven products. A West Floor Specialist will help you select the program or product you need.

WEST DISINFECTING Company

Dept. 13
42-16 West Street, Long Island City 1, N. Y.

If you write maker identify as IEN - 1505

TESTING . . Titrating apparatus for moisture content determinations

Source: BECKMAN INSTRUMENTS INC.
800 Mission St., South Pasadena 6, Calif.

Ask for Bulletin 276-5

The company announces new design of its Aquameter for moisture content determinations employing the Karl Fischer method in products such as paper, petroleum, oils, food stuffs, pharmaceuticals, alcohols, ethers. The new design employs an ac. null detecting amplifier circuit that responds to change in resistance between the electrodes due to decrease in polarization as the end point of titration is approached. This new circuit eliminates the need for a sensitive relay employed in the original design. At the same time titrations are not affected by variations in line voltage or the speed with which a sample solution is stirred.

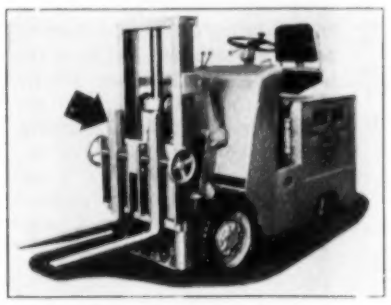
A curved ceramic tray protects the front of the apparatus and the side panels from accidentally spilled chemicals. The assembly includes a built-in variable speed magnetic stirrer and a standard 300-ml. beaker. A detachable silicone seal fits over the top of the beaker to exclude external air.

During titration the reagent is added to the sample solution by means of a burette and the electro-magnetic valve that is a part of the assembly. Current flowing through the solution, during titration, is detected by a circuit which energizes this valve and maintains it in a position to permit reagent to enter the solution. At the end point of the titration the electrodes suddenly depolarize, the current increases rapidly, and the valve cuts off the reagent flow. A timing device, preset before titration is begun, enables the instrument to distinguish between a true and false end point.

If you write maker identify as IEN - 1506

TRUCK . . Fork attachment for frequent width adjustment by hand

Source: ELWELL-PARKER ELECTRIC CO.
4060 St. Clair Ave., Cleveland 3, Ohio



To fit a load

Two forks are assembled on a frame that applies on the company's line of engine and motor driven fork lift trucks. The forks can be adjusted on both sides of center for varying widths by rotating handwheels on the ends of lead screws. The two screws terminate in a center bearing so the forks can also be shifted to either side when desired.

The arrangement permits picking up loads that cannot be centered as well as those requiring the forks to be either close together or wide apart. If the off-center pick-up is not required, the attachment can be equipped with a single lead screw for equal adjustment on both sides of center.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

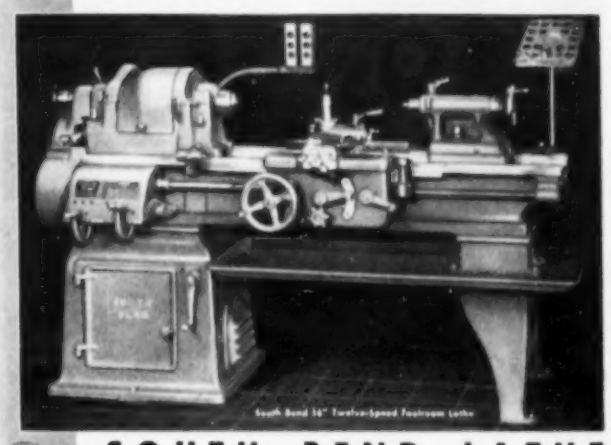
If you write maker identify as IEN - 1507

If you write maker identify as IEN - 1508

Cuts Machining Time

The wide range of spindle speeds on this new lathe cuts machining time because the operator quickly selects the right speed for each operation. Pushbutton control provides a fast change from any high speed to the corresponding low speed. Its 48 longitudinal and cross feeds assure maximum efficiency on every job. Also, you will find that its accuracy and ease of operation make your tough jobs easy. Send for catalog.

SOUTH BEND 12 SPEED LATHE



SOUTH BEND LATHE
SOUTH BEND 22, INDIANA
Building Better Tools Since 1906

If you write maker identify as IEN - 1509

NEW MANCO HYDRAULIC RIVETER

Here's fast, silent, and powerful hydraulic riveting. Riveting cycle only one second. Easy-to-operate hand lever valve mounted on riveting head. No solenoids. Capacity for 1/4" and 5/16" rivets. Adjustable pressure setting for use on straight and shoulder rivets. Riveting yoke reach is 1 3/4" with a gap of 1 3/8" including rivet sets. Other yokes also available. Full swivel about cylinder axis permits easy placement. Compact electric hydraulic pump. Weight of riveting head . . . 18 lbs.

Model R-211-188E

Other Manco Riveters are available with capacities from 10 to 150 tons. Send us your riveting problem.

MANCO *mfg. co.*
Bradley, Illinois

If you write maker identify as IEN - 1510

JOHNSON wide-rehandling clamshell

EASY-CLOSING big-diameter sheaves, with sealed-in needle bearings, reduce friction losses, deliver full power to cutting lips. Light weight, sturdy bucket assures big payload performance in loose materials.

ALL-WELDED smooth, fast cleaning. Hard manganese cutting edge welded to lips toughens with use. 10 Wide Rehandling sizes: 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 1 1/2 - 1 3/4 - 2 - 2 1/2 and 3 cu. yds.

Other Johnson types: General-Purpose and Heavy-Duty Digging.

MAIL TODAY

to: C. S. JOHNSON Co. CHAMPAIGN, ILLINOIS (Koehring Subsidiary)
Send complete facts on ____-cu. yd. Wide-Rehandling Clamshell Bucket.
NAME ____
COMPANY ____
STREET ____
CITY, STATE ____ J249 IEN

If you write maker identify as **IEN - 1511**

CAL-WIC WIRE CLOTH

In all Meshes, Weaves and Weights

Filtering, screening or grading—whatever your special job demands may be—Cal-Wic Wire Cloth is available in the right mesh, weave or weight to meet your requirements. Resistance to corrosion, abrasion and temperature extremes assured through the use of appropriate metals and alloys.

The long-wearing qualities of Cal-Wic Wire Cloth take on added importance during times like the present.

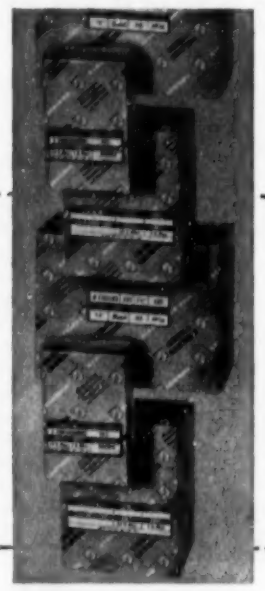
For additional information write or phone our nearest sales office.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado.
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, Calif.

CAL-WIC CF&I
INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as **IEN - 1512**

Eliminate topheavy package inventories with **Kum-Kleen** **laid-on** *labels!*



a common problem... General Controls Co. of Glendale, California manufactures automatic controls for widely diversified applications. Warehousing formerly required segregation of more than 100 different boxes. Product changes, from time to time, would make certain pre-printed box inventories obsolete.

solved with Kum-Kleen labels... Now box inventories are maintained by size alone—IN HALF THE ORIGINAL SPACE! A self-adhesive Kum-Kleen label identifies the contents of each box *as it is used.* According to General Controls, "The unique characteristics of Kum-Kleen labels made this new packaging program possible, and they are saving us many thousands of dollars yearly." Their many Avery electric label dispensers "are proving themselves daily to be a most worthwhile investment as a time and labor saver."

how Kum-Kleen labels work... They're *pressure sensitive*—LAID ON *fast* with a finger-touch—no moistening, no mess! They stay neat and attractive—won't dry out, pop, curl or peel. Patented Avery dispensers—manual or electric—feed die-cut, Kum-Kleen labels off roller tape for quick, clean labeling.

Where can YOU use these labels in YOUR business?

For case histories, samples and prices, please mail the coupon below.

Kum-Kleen *pressure-sensitive* **laid-on** *labels*

AVERY *producers of pressure-sensitive products since 1935*

AVERY ADHESIVE LABEL CORPORATION

117 Liberty St., New York 6
608 S. Dearborn St., Chicago 5
1616 So. California Ave., Monrovia
Offices in Other Principal Cities

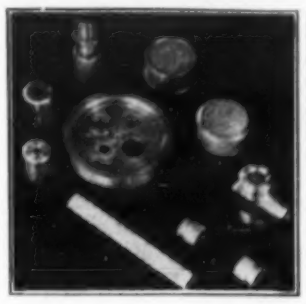
☐ *Please send case histories, free samples.*
☐ *Have Avery label man call.*
Our business is _____

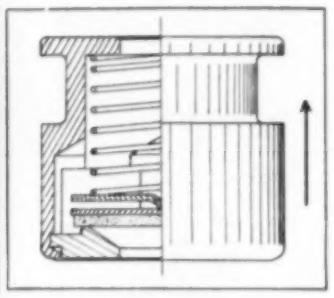
name _____
title _____
company _____
address _____

If you write maker identify as **IEN - 1514**

VALVE . . Sensitive check design operates on atmosphere pressure change

Source: MCD MFG. CO.
3216-20 Barker Ave., Dept. DC, New York 60, N. Y.





For production to your order

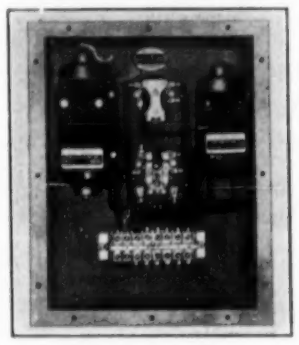
Soft rubber disc is backed by a plate and light weight spring in this new check valve. It was originally developed to permit breathing in instrument and equipment housings or in aircraft upon leaving the ground or coming down from an elevated position. For this purpose cracking pressure is about 4 oz. per square inch. Maximum leakage is 0.05 cc. per min. per unit.

The valve applies singly or in multiple assemblies as shown in the illustration. In each case it is supplied to specification in required materials, dimensions and mounting.

If you write maker identify as **IEN - 1515**

CONTROL . . Electric equipment actuates cranking motor on engine

Source: INDUSTRIAL CONTROL PANEL CO.
245-49 E. Illinois St., Chicago 11, Ill.



Built to order

Illustrated is a new assembly of relays and accessory equipment to control battery power to the motor that cranks a diesel or a gasoline engine. The equipment controls the starting operation to apply cranking power for a pre-determined interval and then rest for an interval before resuming the cranking effort. Total number of cycles and lengths of intervals are adjustable. Provision is made to stop the sequence when the engine starts under its own power. The assembly illustrated is designed for a 32-volt dc. circuit. It can be specified for any ac. or dc. voltage and can be assembled in an open or weatherproof housing to meet given conditions.

Identify as **IEN - 1516**

Porter Cable Machine Company set out to find new uses for its portable electric tools. It announced a contest, set up a set of rules which it packaged with each tool sale. Results of the first semi-annual contest have exceeded anything the company dreamed of. Ideas have come in accompanied by drawings, photographs and working models. A copy of the next contest rules and illustrations of the prizes offered will be sent to you upon request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1517**

WAR & INDUSTRIAL NEW • USED **SURPLUS BARGAINS** SAVE UP TO 85% 1001 ITEMS

MAGNETIC PILOTED PISTON VALVES TYPE K-15
Pilot piston operated, packless, current failure, solenoid valves that provide on-off control of fluids or gases in response to two-wire electrical circuits. Suitable for use with oil, water, air, commercial gases, steam, Freon, CH_3Cl, SO_2, and brine. Mfg. General Controls; W.P./300 P.S.I. @ 275°F. Write for information where specifications are critical.
BRAND NEW ..... $45.00 ea.

ELECTRIC OIL HEATER (Immersion Type)
Immersion type electric oil heater adaptable for a wide range of applications throughout industry. Mfg. Westinghouse Electric; Style #1314510; 115 volts; variable wattage 300-400-800.
Brand New ..... $6.95 ea.

SYNCHRONOUS SELSYNS
110 Volt, 60 Cycle, Brass Cased, approximately 4" diameter x 6" length. Mfg. by Diehl and Bendix. Quantities available.
REPEATERS $20.00
TRANSMITTERS $20.00

POWER RHEOSTATS
Standard brands: 5 Ohms; 100 watt; 4.48 amps, 100 Ohms; 100 watt; 1.0 amp.
BOXED BRAND NEW with Knob . $2.50 ea.
1 Dozen $23.00

FIELD PHONES
An ideal inter-communication system for industrial plants, warehouses, lumber yards, small shops and home extensions. Simple-to-install . . . requires only two interconnecting wires. Operates for year on two flashlight cells. Magneto ring, self-contained in metal wall mount case. Range 7 miles. Factory Reconditioned LIKE NEW ..... $4.50 Pair
FIELD ASSAULT WIRE ½ mile reels: NEW $13.50

TRANSFORMERS
SOLA TRANSFORMERS #30663: 1 KVC; 210-270 Volts; 240 Sec.; 3-Phase $175.00
FILAMENT, General Electric #7466321: Primary 110/125 Volts. Secondary 11 Volts, 65 amp. 975 KVA. Shipping wt. approx 60# $29.95
FILAMENT, AmerTran #29048: Primary 115 Volts, 50/60 cycle. Secondary 5 volts, 190 amp. Shipping wt. approx. 75# $39.50
VARIABLE, AmerTran #29144: 250 VA.; 103-136 commutator range; fixed windings; 115 Volt; Max. 2.17 amp. $14.75

METERS
AMMETER: DC; 3" dia.; 100-100; complete with external shunt ..... $5.95 ea.
AC VOLT METER: Westinghouse Type NA-35; 3" round. F.S.-10MA ..... $6.95 ea.
AMP METER: DC; 0-300 Amp.; 3" round; complete with external shunt ..... $6.95 ea.
ELAPSED TIME METER: Aero Inst. Model 1001; Records operating time of AC electrical and electronic equipt. Registers up to 9,999.9 hrs. in 1/10th hour increments . . . automatically resets. Diameter 3½", glass covered face. 110 VAC; 60 cycle ..... NEW $14.95 ea.

G. E. GENERATORS
General Electric Type SASB-31J3. 400 cycles out at 115 volts; 7.2 Amp.; 8000 rpm; size 6" long x 6" diameter.
Specially priced at ..... $99.50 ea.

WRITE FOR INFORMATION, PRICE AND SAMPLE ON . . .
TAPE, Cellulose; yellow electrical; 6 inches wide.
TAPE, Electrical Plastic; 6 inches wide.

PRICES F.O.B. PASADENA UNLESS OTHERWISE QUOTED PLEASE ENCLOSE FULL AMOUNT WITH ORDER

C & H SALES COMPANY
BOX 356-FE • East Pasadena Station • Pasadena 8, California

If you write maker identify as **IEN - 1518**

A-1035

EASTON Furnace Cars

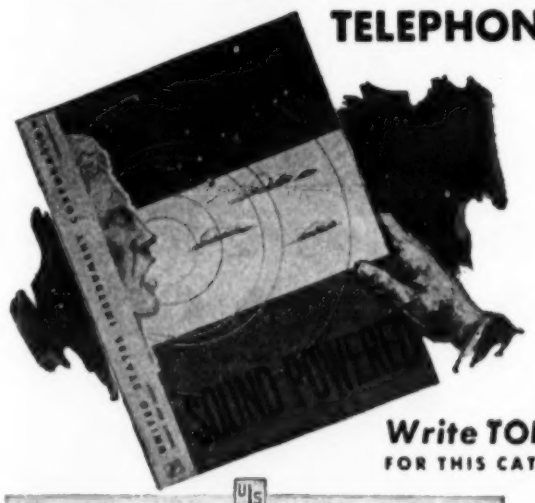
EASTON experience covers small and large capacity furnace cars for every requirement, including electric self-propelled cars for automatic continuous heat treating systems.

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.
NEW YORK • PHILADELPHIA • PITTSBURGH

If you write maker identify as **IEN - 1519**

Modernize your communications . . . without batteries

U. S. I. SOUND POWERED TELEPHONES



Write TODAY FOR THIS CATALOG

Write Dept. D for Catalog

If you write maker identify as **IEN - 1520**

send for complete catalog 53-E

No. 15 Double Seats
No. 14 Single Seat
Globe or Angle Pattern

everything you want in **FLOAT VALVES**

KECKLEY

No matter what your float valve needs may be, Keckley can meet them. For dependable level control, you can't beat Keckley valves. They're built to offer long service with minimum maintenance. And Keckley balanced float valves provide constant, uniform flow and positive closing. Sizes from ½" to 12". Screwed, standard or extra heavy flanges. Check with Keckley.

PRESSURE REGULATORS • TEMPERATURE REGULATORS • POP SAFETY VALVES • RELIEF VALVES • FLOAT BOXES • BALANCED VALVES FORGED STEEL GAUGES • MOTOR OPERATED VALVES • PUMP GOVERNORS • FLOAT VALVES • STRAINERS

O. C. KECKLEY COMPANY
400 West Madison Street • Chicago 6, Illinois

If you write maker identify as **IEN - 1521**

Grounds upkeep and maintenance problems are solved quickly, easily and BETTER when you use the powerful 5-HP Gravely Tractor! . . . 21 tools for year-round use with seasonally selected attachments, quick change from job to job in minutes! Only the Gravely does so many jobs so well!

All-Gear Drive, Power Reverse. Institutions-tested for 32 years . . . Ask for your copy of FREE Gravely catalog, "Power vs. Drudgery." Find out how you can do MORE jobs faster and better. Write for it today!

Gravely Motor Plow & Cultivator Co.
BOX 240 DUNBAR, WEST VIRGINIA

If you write maker identify as **IEN - 1522**

ARE YOU READY FOR A VALUABLE *Education?*

HOW YOU CAN PROTECT YOUR PRODUCTS AND EQUIPMENT FROM THE INROADS OF RUST • FUMES • SCRATCHES
in all atmospheric conditions!

★ For the first time . . . Eagle presents THREE NEW PRODUCTS for your application which will prevent costly repairs or complete replacements.

EAGLE "SPRAY-STRIP"
RELEASE BARRIER
An Aluminized Strippable
PROTECTIVE COATING

Applied cold, by brush, dip or spray. Covers your product with a tough, resilient film. Prevents damage resulting from moisture, salt air, salt water, grease, oils, abrasion during shipment or in storage. Strips off quickly, clearly, without solvent.

EAGLE "MZP-KOTE"
Metallic Zinc Paint
THE IDEAL RUST STOPPER!

Utilizing a specially developed synthetic vehicle, this paint has a greatly prolonged protective quality, proven by 10 year tests. By far your best protection against rust and corrosion for structural iron and steel. Apply by spray or brush for twice the coverage of red lead paint.

EAGLE "SOFT-KOTE"
Anti-Rust and Anti-Fume
CORROSION PREVENTIVE

A product proven in World War II on airplane equipment and precision instruments. Valuable protection for weather exposed industrial machinery and equipment.

One or all of these "EAGLE-KOTE" products are obtainable in 1 gal., 5 gal., or 50 gal. drums for a "Prove-it-first" test.

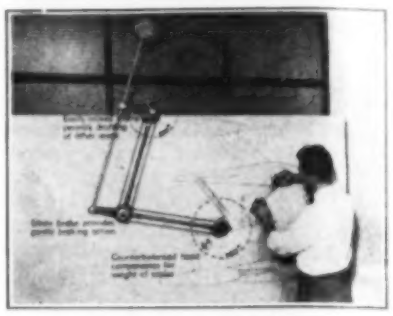
Complete descriptive literature is available on request. Write Dept. IEN-2.

EAGLE *Chemical Co.* JOLIET, ILL., U.S.A.

If you write maker identify as **IEN - 1524**

DRAFTING . . Parallel arm machine counter weighted to mount vertically

Source: V & E MFG. CO.
P. O. Box 950-M, Pasadena 20, Calif.



Locks and releases

Two sizes are available in the company's new Vertical Drafter. A 24-in. unit covers a drafting surface measuring 36 by 60 inches. A 30-in. size covers either 42 by 84 in. or 48 by 72 inches. In both cases, the drafting board mounts vertically as shown in the illustration. A counterbalance takes care of overhanging load in the machine which mounts 12-in. vertical and 18-in. horizontal scales. The stand-and machine lists at $144 and $151 without the scales.

If you write maker identify as **IEN - 1525**

CLEANING . . Liquid coating prevents glue from adhering to metal

Source: FEDERAL ADHESIVES CORP.
212-18 Wythe Ave., Brooklyn 11, N. Y.

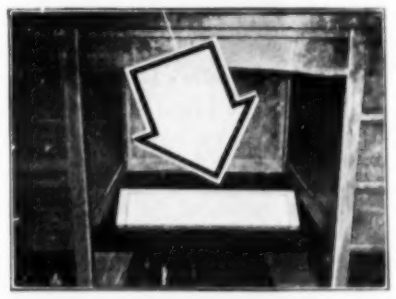
For equipment handling glue

Resinproof is a new liquid material for application in the interiors of glue pots and on machine parts coming in contact with glue, including resins, latex and dextrine adhesives. The liquid dries to form a smooth coating that makes it possible to clean the surfaces with hot or tepid water without any difficulty. One application will last for three or four weeks of normal service. The liquid is water miscible and is packed in 1-pt., 2-pt. and gallon cans.

If you write maker identify as **IEN - 1526**

HEATING . . Infra-red unit particularly to provide worker comfort

Source: ROTONE INC.
1434-38 W. Fullerton Ave., Chicago 14, Ill.

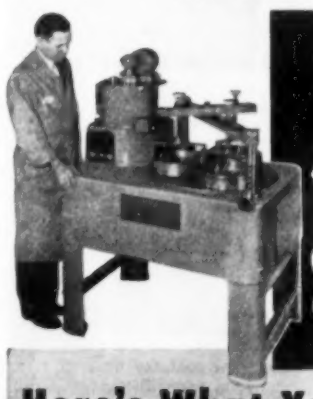


About $30

Ceramic element is fused into treated non-shatterable glass in this new Draft-Dodger heater. The element does not glow and is safe to touch. It plugs into a 110-volt power source to provide gentle warmth in factory and office cold spots. The glass panel is assembled in a steel frame with outside dimensions at 30 by 6½ by 1½ inches. Mounting is on the floor or on a partition. A pair of brackets is supplied for installation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1527**



Investigate LAPPING!
On Metals-Ceramics Quartz and Plastics

Here's What You Can Do With a CRANE LAPMASTER..

With a Lapmaster you can lap different parts in one cycle, lap wide range of parts of different materials in short or moderate production, lap identical parts at tremendous production rates and maintain tolerances to one light band (.0000116"), GET all the facts. Lapping may be the solution to your problem.

Write for free bulletin I.E.N. 52.

JOHN CRANE CRANE PACKING COMPANY
LAPMASTER DIVISION
1815 CUYLER AVENUE • CHICAGO 13, ILLINOIS

If you write maker identify as **IEN - 1528**

Control that says "Stop" to engine trouble

• The No. 530 Sylphon Engine Safety Control gives positive protection against high jacket water temperature and low lube oil pressure. Guards against engine troubles. Can be supplied with or without valve . . . pressure connection . . . or alarm switch. Adaptable to practically any specified conditions. Simply constructed. Self-operating. For complete information, send for Bulletin CN-8.

FULTON SYLPHON
DIVISION
ROBERTSHAW-FULTON CONTROLS CO. • • KNOXVILLE 4, TENN.
Temperature Controls • Bellows Devices • Bellows Assemblies
Canadian Representatives, Darling Brothers, Montreal

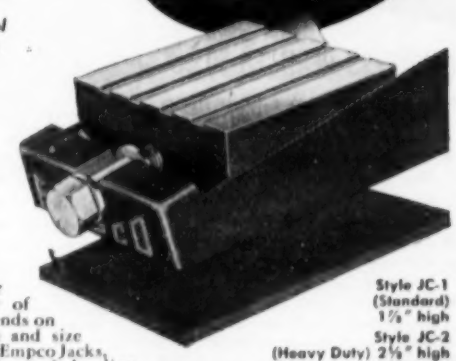
If you write maker identify as **IEN - 1529**

QUICK, ACCURATE MACHINE LEVELING

WITH VIBRATION ABSORBING MOUNTING PADS

- *Provides Accurate Adjustment*
- *Reduces Vibration and Noise*
- *Lower and Sturdier*
- *Self-Aligning*
- *Two-Way Control*
- *Smooth Slipways*

Empco JACK



Empco Jacks enable you to meet hurry-up demands for relocation of machinery by giving you the fastest, easiest, most accurate machine leveling ever known: you simply raise or tilt machine sufficiently to allow the Empco Jacks to be slipped under base. The number of jacks required depends on weight of machine and size of base. Once set on Empco Jacks, the entire operation of leveling and maintaining equipment level is quickly done. By applying a wrench to the "hex" head of adjusting screw, an adjustment is obtained either up or down until your level indicator reads "zero." Write for specifications and prices today.

Style JC-1 (Standard) 1⅞" high
Style JC-2 (Heavy Duty) 2⅛" high

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

If you write maker identify as **IEN - 1530**

ALLIS-CHALMERS *Dry-Type* TRANSFORMERS

Boost Low Voltages

Install an Allis-Chalmers dry-type transformer right next to the load it serves — on overhead trusses, walls, platforms, or directly on the machine. You'll get higher motor, lighting, and thermal efficiency, resulting in economical utilization of power.

Installation is easy because knockouts are provided for connecting conduits directly to transformer case. System cables are connected to transformer terminals in roomy compartments. No vaults or expensive enclosures are needed. Install A-C dry-type transformers and forget them except for periodic inspections. No insulating liquids to mess with; no gauges or gaskets to fuss with.

Call your nearest A-C district office for full information or write Allis-Chalmers, Milwaukee 1, Wisconsin.

A-3958

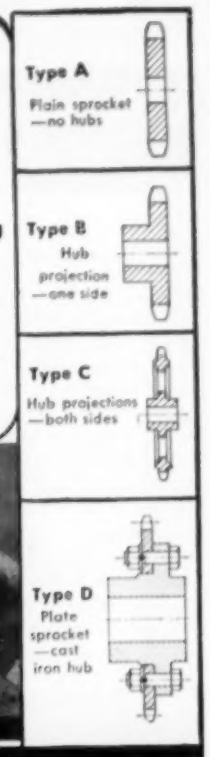
ALLIS-CHALMERS

If you write maker identify as IEN - 1531

"We'll cut costs here with SEWALL STOCK SPROCKETS"

• Why have sprockets tooled to order when you'll get quick service on standard pitch, roller chain sprockets right out of the Sewall catalog? These diagrams will help you decide if Sewall can help to cut your sprocket costs. *Send for your free catalog.* Service offices in Chicago and St. Paul.

By the makers of Sewall Custom-Built Gears



E. B. SEWALL MFG. CO.
711 RAYMOND AVE. • ST. PAUL 14, MINNESOTA

If you write maker identify as IEN - 1532

Hear HERE!

LOUDNESS REDUCED 50%*

Inside a Burgess-Manning Acousti-Booth

- The hushed interior of a Burgess-Manning Acousti-Booth provides a quiet, restful place to hear well.
- Light, sturdy construction for ease of moving . . . compact design.
- Doorless construction . . . light, airy, well ventilated.
- Wall and floor models.
- Suited to any noisy location.

** Based on studies by a prominent research organization.*

Write for Bulletin 103A

BURGESS-MANNING COMPANY
Architectural Products Division
5970-A Northwest Highway, Chicago 31, Illinois

If you write maker identify as IEN - 1533

STANDARD CARBIDE MILLING CUTTERS
From The World's Most Complete Stock of Standard Carbide Tools

QUALITY CARBIDE TOOLS

Super TOOL COMPANY
21650 Hoover Road Detroit 13 Michigan

If you write maker identify as IEN - 1534

LUBRICATING . . Grease pump, hose and gun operate on battery power

Source: G & T INDUSTRIES INC.
1421 Barwise, Wichita 2, Kansas

Protected by pressure switch

Greasemaster Model 6-V is a new portable assembly of high pressure pump, 25 ft. of 3,000-lb. hose and a trigger operated gun to apply on pressure fittings on heavy equipment. The new assembly includes a 10-ft. length of electric cable and clips to attach to a 12 or 6-volt vehicle battery. Assembly weight is 40 pounds. The equipment is suited particularly to lubricate machinery in areas where electric power from normal sources is not ordinarily available or accessible.

If you write maker identify as IEN - 1535

PROCESSING . . Stainless steel tank to mix and handle corrosive liquids

Source: RECO SALES CO.
70 E. 45th St., Room 5630, New York 17, N. Y.

10 to 600 gallons

Floating cover made of transparent chemically-inert plastic features the construction of the company's new stainless steel chemical mixing and storage tank. The cover fits closely inside the round tank but does not bind against the tank walls. It moves up and down with changing liquid level and minimizes oxidation of the liquid in the tank. The tank is fitted with a stainless steel spring closed spigot through which liquid can be dispensed. A neoprene O-ring is the sealing member. The spigot can be taken apart quickly and reassembled to simplify cleaning.

Identify as IEN - 1536

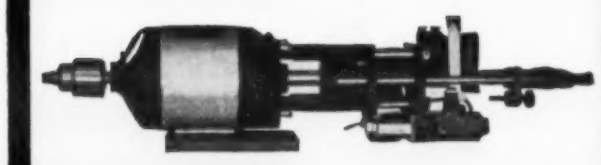
Flame-Plating is a new development by Linde Air Products Company in which a hard thin precise coating of powdered metal, such as tungsten carbide, is applied on metal parts. These parts can be items such as bearing balls, saw blades, most any type of cutting tool. Temperature of the base metal does not exceed 400 deg. F. during the plating operation.

Parts to be plated are prepared by the user and sent to the company's Speedway Laboratories in Indianapolis, Ind. There the actual plating work is done. The user finish grinds or has it done. The company will establish additional facilities as demand for the process grows. Price ranges from about 70 cents to $10 per square inch depending on work size, shape, thickness and quantity.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1537

New BLACK SELF-CONTAINED DRILLING UNITS



NO SPLINES

NO GEARS

NO CAMS

NO CLUTCHES

NO REVOLVING WEIGHTS

Self-contained units, at low cost, for drilling, tapping, chamfering, reaming and similar operations.

New principle employs traversing motor shaft for work spindle, applies even torque with practically no end play. Drill has air feed for rapid advance to work—hydraulic control to completion of work cycle with uniform feed. Tapping unit controlled so tap follows its own lead without chamfering first thread or stripping threads on return stroke. Easy adjustment—depth accuracy to within .001".

Operate in any position. Wide range of speeds and sizes.

Write for complete information

BLACK DRILL COMPANY, INC.
1378 EAST 222nd STREET CLEVELAND 17, OHIO

If you write maker identify as IEN - 1538

● The Stuard AUTOMATIC AIR SEPARATOR removes all moisture, oil and foreign matter from air lines. Does not waste air by continuous venting. Patented one-piece separator and eliminator chamber. Write for bulletin.

R & IE STUARD AUTOMATIC
AIR SEPARATOR
R & IE EQUIPMENT DIVISION
I-T-E CIRCUIT BREAKER CO., GREENSBURG, PENNA.

If you write maker identify as IEN - 1539

IT'S EASY TO NUMBER with

HERCULES HOLDERS
Reg. U. S. Pat. Off.

marks Flat, Concaved or Convexed Surfaces

AND
Shoulder Style Steel Type

Hercules "shoulder style" Heavy Duty Steel Type is made *extra body strength* for long service in stamping metal parts, castings, etc.

NEW FEATURE
By using "pie-shaped" fillers in-between straight line type, standard Hercules type can be used for marking on convexed, curved or concaved surfaces.

Write for details.

The ACROMARK *Company*
7 MORRELL ST., ELIZABETH 4, N. J.
"THE ORIGINAL MARKING SPECIALISTS"

If you write maker identify as IEN - 1540

FLEXIBLE

METAL HOSE

For every industrial purpose wherever flexing, vibration, or movement is involved.

For pressures to 20,000 P.S.I. Temperatures to 2,000° F. — or for vacuum service or sub-freezing temperatures. Available as random length hose or as assembled units with fittings.

Made in—Seamless Bronze — 3/16" I.D. to 10" I.D.
Carbon Steel — 1/4" I.D. to 20" I.D.
Stainless Steel — 1/4" I.D. to 4" I.D.

WRITE US FOR CATALOG

PACKLESS METAL HOSE Inc.
31-40 WINTHROP AVE. • NEW ROCHELLE, N. Y.

If you write maker identify as IEN - 1541

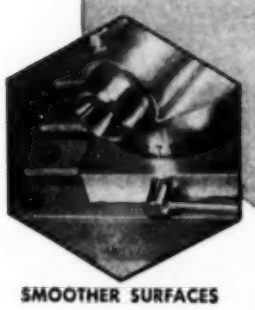
ALLEN⬡HEAD
Flat Head
CAP SCREWS

- Maximum head contact
- Perfect Concentricity
- Threads Class 3 fit
- Burr-free threads and sockets

Allen Flat⬡Head Cap Screws are heavy duty fasteners ideal for fastening thin plates, strips, mouldings and sheet metal parts by combining the advantages of maximum head contact, flush heads, and non-slip keying.

Standard in sizes from No. 4 to ¾" diameter and from ¼" to 3" length, N.C. threads. Many sizes also standard in N.F. threads.

SOLD ONLY THROUGH LEADING INDUSTRIAL DISTRIBUTORS

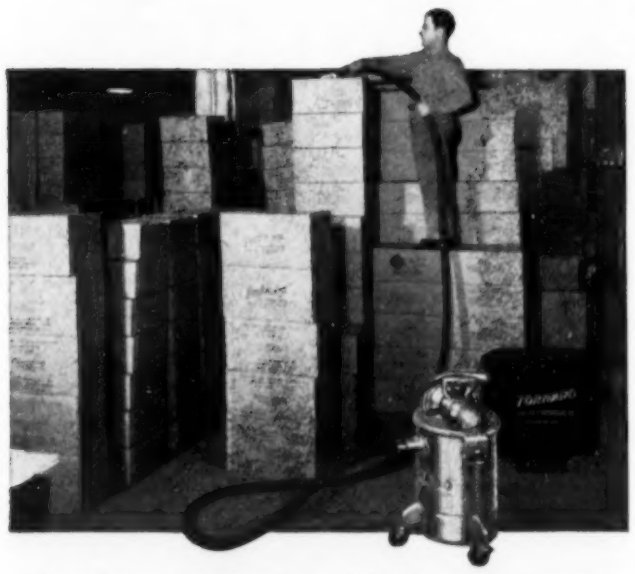


SMOOTHER SURFACES

THE **ALLEN** MANUFACTURING COMPANY
Hartford 2, Connecticut, U. S. A.

If you write maker identify as IEN - 1542

A "Sweet" Cleaning Job by TORNADO®



Peerless Confection Co., Chicago, uses Tornado for cleaning throughout candy plant

Wet pickup after scrubbing

Overhead cleaning of heat pipes

A manufacturer of confections must keep a plant immaculate to maintain rigid sanitary standards.

To do this job, the Peerless Confection Company uses Tornado for cleaning from floor to ceiling. 1. They follow floor scrubbing operations with Tornado to pick up solutions and leave floors clean and dry. 2. Ceiling fixtures and overhead pipes are kept free of dust with Tornado. 3. Even stored products are cleaned of all dust with Tornado.

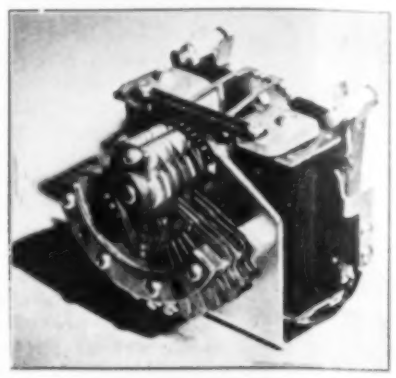
No matter what business you are in, cleanliness and proper maintenance is an important factor in production, safety and profits. Let us tell you about the unusual Tornado method of cleaning. Just write for Bulletin 607.

BREUER ELECTRIC MFG. CO.
5108 N. RAVENSWOOD AVENUE • CHICAGO 40, ILLINOIS

If you write maker identify as IEN - 1544

SWITCH . . Solenoid operated for 36 positions in 10 degree steps

Source: CONSOLIDATED ENGINEERING CORP.
302 N. Sierra Madre Villa, Pasadena 8, Calif.



Bi-directional

Direct drive acts through an electromagnetically operated pawl and ratchet to "step" this new Model-27000 switch. Movement occurs from one step to the next each time the solenoid circuit is closed. A typical design has four parallel circuits to 12 positions. Special contact banks can be specified with as many as 25 contact positions. By replacing one level of contacts with a solid metal sector to provide a center feed to the wipers, it is possible to obtain 36 contacts in 360 degrees of rotation.

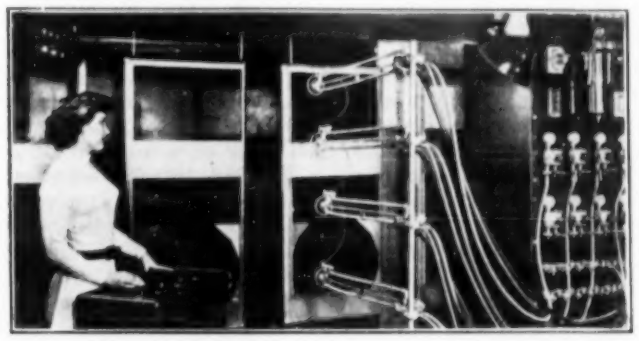
The actuating pulse is one of short duration and can be applied to advance or reverse the shaft and wipers one step for each pulse. An interlock prevents partial steps.

Applications are in various types of high speed differential counters and in servo mechanisms due to the self-interrupted reversible operation. The unit can be employed to indicate a remaining quantity as in a hopper or processing unit where each unit inserted advances one step and each unit taken out results in one step in reverse.

If you write maker identify as IEN - 1545

PAINTING . . Electrostatic equipment guides paint deposit in spray booths

Source: SCIENTIFIC ELECTRIC CO.
111 Monroe St., Garfield, N. J.



Charges the paint

Ionic trade names new electronic electrostatic equipment for application with adjustably mounted paint spray heads, and accessory equipment supplied by the user, to attract spray to the surfaces of work moving under a conveyor line in production. This is accomplished by establishing a potential in the spray as it issues from the heads. Paint spray entering this field will coat work surfaces directly in front of it and also will move around to the back to coat those surfaces. The company is prepared to supply the power equipment and gun for operation on standard specified power input.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1546

FREE

IF YOU PRODUCE PARTS THAT REQUIRE FINISHING OF ANY KIND

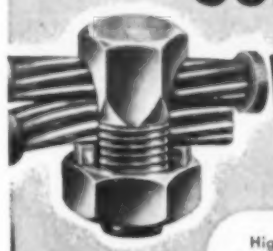
This amazing 22-page booklet is *guaranteed* to open your eyes! Gives latest, up-to-the-minute facts – figures – photos on advanced barrel finishing. Shows how single unit installation replaces from 2 to 12 men—*savings up to 95%* on almost all types of parts from large castings to small intricate parts.

Investigate today! Send for your FREE copy of Booklet No. G-2 today.

AMCO Supersheen
AMERICA'S LARGEST MANUFACTURER OF ADVANCED BARREL FINISHING EQUIPMENT—MATERIALS AND COMPOUNDS
ALBERT LEA, MINNESOTA

If you write maker identify as IEN - 1547

For Dependable, High-Pressure Connections



BLACKBURN Hi-Strength CONNECTORS

High-pressure connections are the best electrical connections. They are also the best mechanical connections because tests show that they have better ability to stay tight—are trouble-free once installed.

All connectors in the famous BLACKBURN Hi-Strength Line produce high pressure connections. Also, they are priced right to give you low cost connections that you can depend upon . . . Be sure to specify BLACKBURN!

SEND FOR CATALOG
JASPER BLACKBURN CORPORATION
35 Madison St. • St. Louis 6, Mo. • CEntral 3007

If you write maker identify as IEN - 1548

This booklet will help you

AVOID COSTLY FIRE LOSSES

Send for eye-opening facts on Rockwood's Triple-Action WaterFOG Nozzle

Here's a real all-purpose fire fighting nozzle. The Rockwood SG-48 can be quickly changed to a high velocity WaterFOG, straight water stream or low velocity WaterFOG pattern. Extinguishes fires in flammable liquids or ordinary combustibles faster, with less water and less damage. Protects firemen from hot fumes and gases and is easier to handle. Operates satisfactorily at 50 psi at the nozzle. For industrial and chemical plants, oil refineries, mercantile and public buildings, etc. Tested by Underwriters' Laboratories, Inc. and approved by Factory Mutual Laboratories.

Bulletin C-501R gives you complete data. Send for it today. Distributors in all principal cities.

ROCKWOOD SPRINKLER COMPANY
Engineers Water . . . To Cut Fire Losses
40 HARLOW STREET, WORCESTER 5, MASS.

If you write maker identify as IEN - 1549

This book on AMSCO DREDGE PUMPS can help cut costs in your Dredging Operations

More and more operators are turning to Amsco Dredge Pumps made with manganese steel—"the toughest steel known" in order to save time, money, and materials in their dredging operations.

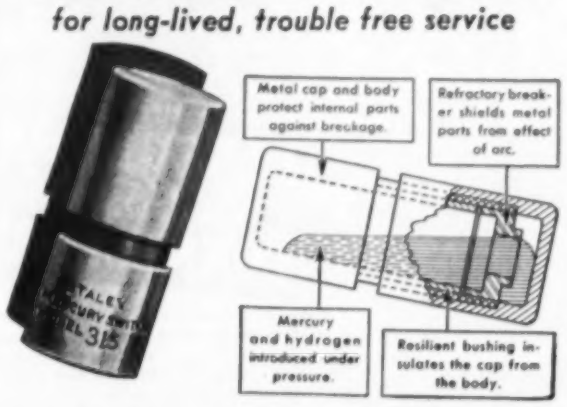
This book tells you where the real savings can be made and how you can make them. Write for booklet 1052-P.

AMERICAN Brake Shoe COMPANY
AMERICAN MANGANESE STEEL DIVISION
415 EAST 14th STREET • CHICAGO HEIGHTS, ILL.

If you write maker identify as IEN - 1550

USE STALEY METALLIC MERCURY SWITCHES

for long-lived, trouble free service



Millions in Use — here's why!

1. Positive mercury-to-mercury contact *without danger of breakage.*
2. Concentric design—never a wrong side up in any installation.
3. De-ionized arc quench occurs in an inert gas, insuring long life and dependable service.
4. Handle instantaneous loads several times rated capacity; high degree of safety in explosive atmospheres.
5. Available in two types: (1) non-insulated for clip mounting; (2) insulated and provided with flexible terminals.

For a better method of making and breaking electrical circuits, with no switch points to burn, pit or stick and no glass to break, standardize on long-lasting Staley Metallic Mercury Switches. Millions in use. Write today for descriptive Bulletin.

ELECTRIC SWITCH CORPORATION
1303 E. Eleventh Street, Columbus, Indiana

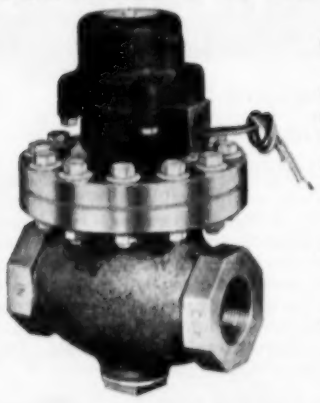
If you write maker identify as IEN - 1551

Atkomatic SOLENOID ELECTRIC

free Bulletin

High Pressure Valves

FOR REMOTE or AUTOMATIC CONTROL



- Sizes ½, ¾, 1, and 1½ inches.
- Pressures to 3,000 psi.
- Full ported, rugged, dependable.
- No external linkage, operates with only three moving parts, reduces valve maintenance.
- For use with any media not harmful to bronze or stainless steel.
- Easily maintained, all parts accessible without removing valve from line.

Write for more complete information

ATKOMATIC VALVE COMPANY
545-A ABBOTT STREET • INDIANAPOLIS 25, INDIANA

If you write maker identify as IEN - 1552

ANGLE STEEL SORTING FILE . . MAILING TABLE

Combination

FOR OFFICE, FACTORY OR CLASSROOM
Here's an efficient 36-compartment Sorting File with 30 shelves, adjustable on ½" centers. Each shelf with own label holder. COMBINED with all steel table which has smooth top for good writing and working surface, and 2 roomy 21½" x 22" x 3½" drawers for ample storage space.

NO. 3002 ALL STEEL SORTING FILE 12" DEEP, 60" WIDE, 19" HIGH.
NO. 3003 ALL STEEL TABLE 30" DEEP, 60" WIDE, 30" HIGH FINISHED IN OLIVE GREEN OR GREY ENAMEL

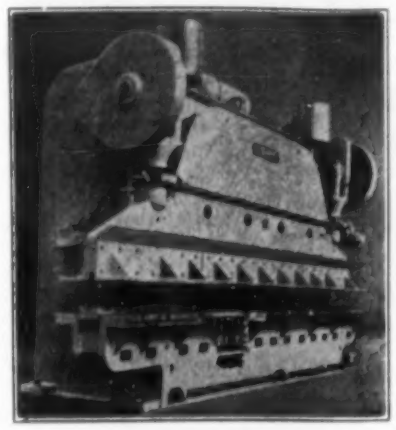
For additional information send for FREE Literature giving Company Name and Title to

ANGLE STEEL INC.
DEPT. 3, PLAINWELL, MICHIGAN

If you write maker identify as IEN - 1553

BENDING . . Motor driven press rates 250 ton, also for shallow draws

Source: CINCINNATI SHAPER CO.
Garrard & Hopple Sts., Cincinnati 25, Ohio



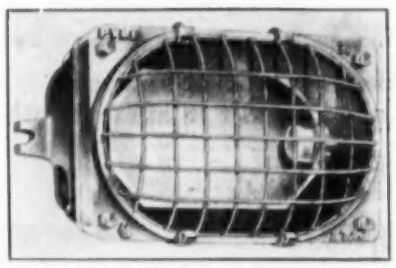
Double purpose design

The bed in this new All-Steel press brake measures 15 ft., 8 in. in overall length by 30 in. in width. It is fitted with fourteen 6-in. air cylinders to back up the work in shallow drawing operations as well as to strip it from the die. The head provides 4-in. vertical stroke. Shut height and throat clearance are both 12 inches. Weight is 72,000 pounds. Operating speed of the new machine in standard design is 23 strokes per minute.

If you write maker identify as IEN - 1554

LIGHTING . . Floodlight fixture for use in pits, tunnels, washracks

Source: PYLE-NATIONAL CO.
1348 N. Kostner Ave., Chicago 51, Ill.



Ask for Bulletin 2105

Four cap screws secure the gasketed cover glass assembly to the body of this new Type-1570 floodlight. No moisture can enter the interior where an Alzak aluminum reflector is mounted with a porcelain medium screw base lamp receptacle. The fixture takes a 100, 150 or 200-watt lamp. Application can be recessed or surface mounted in or on a wall or ceiling.

A hinged wire guard, when specified, provides additional protection for the glass front. It is held closed with spring latches. They can be reversed to hinge from either side. Overall dimensions are about 12½ by 8½ by 6½ inches. List price is $22.70 with the guard.

Identify as IEN - 1555

Useful information concerning compressed air, the equipment to produce it, the points where it is used, the things that can be done with it has been collected and distributed over the years by Compressed Air & Gas Institute. Part has been in the form of articles in the technical press, part in a handbook on the subject. The work has earned for the Institute the 1952 Award of Merit for Distinguished Service sponsored by American Trade Association Executives. The program is being developed further by the Institute in collaboration with Edmond C. Powers, director of public relations for Griswold-Eshleman Company.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1556

AUTOMATIC PROTECTION OR CONTROL for your heating process

. . . WITH

ALNOR PYROTAC

Here's a simple, low-cost way to obtain *AUTOMATIC PROTECTION* against damage due to excessive temperatures . . . safeguard your investment in heating equipment and materials in process. This precision-built instrument constantly indicates temperature of the heated equipment and sounds an alarm and/or shuts down the heated circuit at a safe, pre-set temperature. It may also be used as a *CONTROLLER* on a process requiring shutdown upon reaching a final process temperature—such as ceramic kilns, molds, etc. Automatic thermocouple break protection assures safety if couple or extension wires should break.

Ask your Alnor representative for details on this sturdy, precise instrument. You'll find the price of less than a hundred dollars unusual for an instrument of this type. Write for bulletin that contains complete description and wiring diagrams of actual applications. Illinois Testing Laboratories, Inc., Room 517, 420 N. LaSalle Street, Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 1557

BENEFIT 3 WAYS

by putting machinery on vibration absorbing

1. EASIER, FASTER MACHINE INSTALLATION
Isomode Pads work on any type of flooring. No need to bolt to or damage floor. Simply cut the required area of Pad and place under base or legs of equipment.

2. QUIETER PLANT . . . Absorbing impact and vibration—even that of high capacity punch presses – Isomode Pads can help you reduce noise levels, increase comfort.

3. LESS MACHINE MAINTENANCE . . . There's less stress and strain on machines when they're flexibly mounted. You thereby save maintenance time and labor, help equipment last longer.

Made of DuPont Neoprene, the Pads resist oil, water, aging. Get more details.

THE MB MANUFACTURING COMPANY, INC.
1064 State Street, New Haven 11, Conn.

If you write maker identify as IEN - 1558

CALCULAGRAPH

figures elapsed time accurately

Reliable job time records are essential for compiling correct cost data, estimating reorders and checking on production efficiency. One sure way to secure accurate to the minute, dependable time costs is to use Calculagraph automatically-figured elapsed time records. Calculagraph gives you total elapsed time, starting and finishing time and date on a permanent, printed reference card. Eliminate losses due to inaccurate job time calculations by using Calculagraph to time your operations.

Write for full information today, to Dept. A.

CALCULAGRAPH COMPANY
SUSSEX STREET, HARRISON, NEW JERSEY

If you write maker identify as IEN - 1560

Left— Union Special Style 20100 H Bag Closing Machine

Here's how to close MULTIWALL PAPER BAGS

FOR lower production costs ...stronger, neater closures ...ability to get out rush orders in a hurry, you can't beat Union Special Bag Closing Machines! Specially built to stand up under heavy production schedules, these machines provide the high output rates needed to meet modern competitive conditions.

In the Union Special line, it's easy to find the right unit to meet your particular requirements. ASK FOR RECOMMENDATIONS.

SEND FOR THIS BULLETIN!

Get your copy of this 16 page illustrated bulletin containing helpful data and charts on the complete Union Special line of bag closing machines. UNION SPECIAL MACHINE CO., 410 North Franklin Street, Chicago 10, Illinois

UNION SPECIAL

If you write maker identify as IEN - 1561

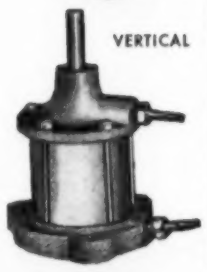
AIR-MITE AIR CYLINDERS

SINGLE ACTING

MICRO

DOUBLE ACTING

CLEVIS



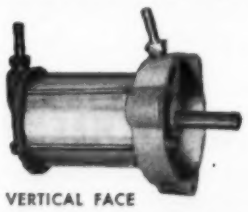
VERTICAL

Worth Their Weight in GOLDen Man-Hours

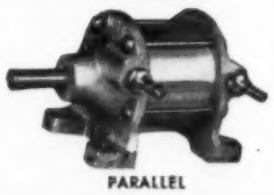
SAVE time, spoilage, cost . . . speed production . . . reduce fatigue . . . on all drilling, reaming, tapping and processing jobs. Available in 1", 1½", 2¼", 3", 4" and 5" diameters; stroke length optional. Single or double action; all mountings.

Write for complete catalog of Air Cylinders and Air Arbor Presses.

AIRMITE 4417-L West Carroll Chicago 24, Illinois

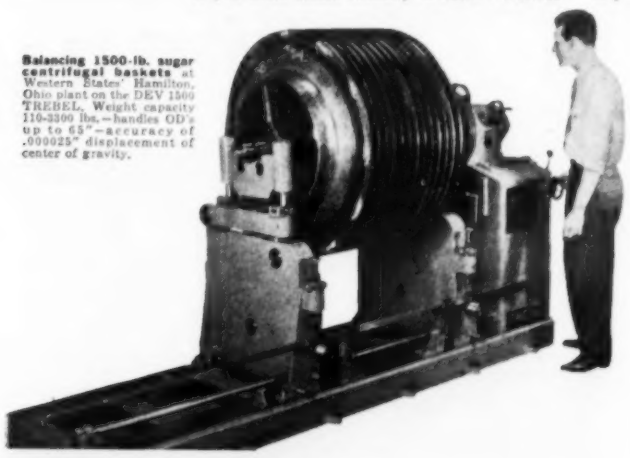


VERTICAL FACE



PARALLEL

If you write maker identify as IEN - 1562



Balancing 1500-lb. sugar centrifugal baskets at Western States' Hamilton, Ohio plant on the DEV 1500 TREBEL. Weight capacity 110-3300 lbs.—handles OD's up to 65"—accuracy of .000025" displacement of center of gravity.

"40% increase in balancing output" at Western States Machine Co.

- Installation completed in a day.
- Operators trained—in production and maintenance—in day and a half.
- Balancing output went up 40% on 1500-lb. sugar centrifugal baskets—60% on smaller units!
- Know any other dynamic balancing machine that will give such results—so fast?

The unique TREBEL balancing principle uses mechanical counter vibration to counteract unbalance...force is variable as to magnitude and phase and cancels out unbalance vibration in machine... indications given in ounce-inches on any work piece without further calibration . . . no special skills required to get fast, accurate results. Hundreds of installations in automotive, aircraft and other mass-production plants—here and abroad—prove it. Prompt delivery. Write for Catalog C.

See the TREBEL in operation in New York, Detroit or our Cleveland Service Center.

KURT ORBAN COMPANY, INC.

205 East 42nd St., New York 17 • 4220 Prospect Ave., Cleveland 3 • 19450 James Couzens Highway, Detroit 35 1939 Santa Fe Ave., Los Angeles

If you write maker identify as IEN - 1563

FASTENING . . Pull type rivet requires access to only one work face

Source: HUCK MFG. CO. 2478-82 Bellevue Ave., Detroit 7, Mich.

Pull to form head

Nickel plated brass is employed in the headed sleeve in a new design of the company's pull type rivet previously described IEN-1565-50. The rivet applies with access to one side of an assembly in connection with a hand tool as shown in the illustration. This tool pulls an expanding pin into the sleeve to form a head on the blind side. The new rivet has a 3/32-in. shank and is designed particularly for attaching nameplates, radio sockets and for tacking and fitting up applications where space is restricted.

The company also announces the availability of its new Model-120 hand tool to drive this and ⅛-in. rivets. The tool lists at about $17 for one diameter. A second nose assembly for the ⅛-in. size adds about $9.

If you write maker identify as IEN - 1564

PAINTING . . Resin base primer for metallic and non-metallic surfaces

Source: PIONEER CHEMICAL & MFG. CO. 1826-30 Columbus Road, Cleveland 13, Ohio

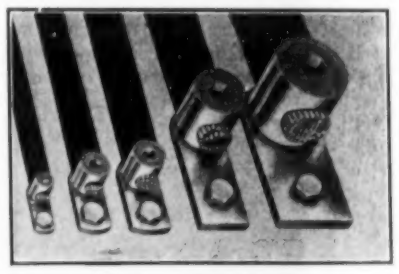
Single gallon list is $5.40

Bakelite resin, special oils and zinc chromate are combined to form a new rust preventive liquid primer for application on metal and non-metallic surfaces. It seals out air and moisture, forms a hard but flexible film following brush or spray application. The film sets up dust free in three to four hours. It dries over night. Decorative finishes can be applied.

If you write maker identify as IEN - 1565

CONNECTOR . . Terminal fitting clamps in place on electric cable

Source: BULL DOG ELECTRIC PRODUCTS CO. Box 177, Detroit 32, Mich.



Silver clad copper

Wire Grip is a silver coated terminal that has been employed in the company's own electrical distribution products until the present time. It is now available generally in five sizes for No. 14 wire to 1,000,000 cm. electric cable. The terminal body is made of cold forged copper. The two largest sizes are equipped with saddles that fit the cable curvature for satisfactory contact. Serrations in the saddles match the individual wires in the cable.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1566

Is your washing machine cleaning brass, aluminum and zinc die castings as well as it cleans steel? Do the nozzles clog too often? Is there too much foaming?

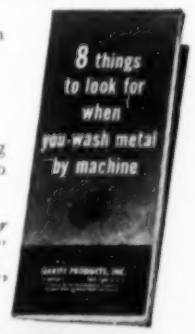
Oakite has developed cleaning materials that meet every requirement for washing metal in every type of machine.

You'll want to read the Oakite booklet on washing by machine —16 pages of suggestions like:

¶ How to select the best detergent. When to use a solvent. When to use alkali. *See pages 4 to 8.*

¶ How to prepare metal for painting. *See page 9.*

¶ Tips on selecting and operating washing machines. Special instrument aids to better operation. *See pages 10 to 13.*



FREE For a copy of "*8 things to look for when you wash metal by machine,*" write to Oakite Products, Inc., 16A Rector St., New York 6, N. Y.

OAKITE

Specialized Industrial Cleaning • Materials • Methods • Service

Technical Service Representatives in Principal Cities of U. S. & Canada

If you write maker identify as IEN - 1567

UNIVERSAL DRILL BUSHINGS establish new standards of high quality

Universal Drill Bushings, produced at the big, modern plant of the Universal Engineering Company, have been first in industry for more than 25 years. They are accurately machined with superhoned bores from the finest quality steel and carefully inspected to insure maximum efficiency and extremely long life. Write today for complete information.

The modern home of finer production tools

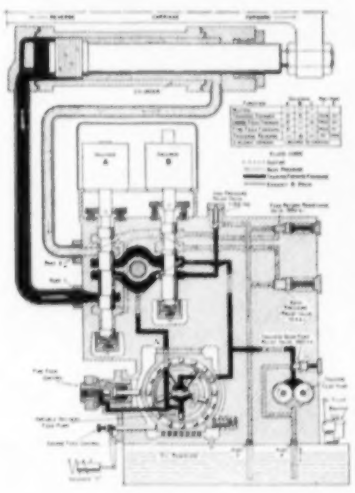
UNIVERSAL ENGINEERING COMPANY

FRANKENMUTH 6, MICHIGAN

156-A

If you write maker identify as IEN - 1568

ANY-FEED Oilgear Power Unit



For machine tool and other straight-line feeds

An amazing little fluid power feed pump for practically any machine tool or straight-line feed installation you can think of. It embodies the *Any-Feed* Oilgear Fluid Power unit with a 20:1 range and rapid traverse as high as 265:1 over feed rate. It provides undeviating precision day in and day out once the feed rate is set.

It installs *into* your assembly easily, or mounts nearby or remotely. Yet control of the many possible functions is found in the electric pushbutton station; or partial or completely automatic operation is available. It affords complete operating safety for all action is instantly neutralized in case of accident. All parts are completely and easily accessible. The design is simple; you mount, connect two pipes and control wires. Write for descriptive Bulletin 44200 now while you think of it. THE OILGEAR COMPANY, 1567 West Pierce Street, Milwaukee 4, Wisconsin

If you write maker identify as IEN - 1569

NOW 2 NEW HYSTER® LIFT TRUCKS

Extra-rugged for "INSIDE and OUTSIDE" Work

6000-LB. CAPACITY

HYSTER XA-60

The ideal "INSIDE-Outside" Truck.

Shorter and narrower than any other 6000-lb. lift truck. A great "inside" truck — equally efficient outside for all-purpose operation ...pneumatic tires. Write for Bulletin 1231.

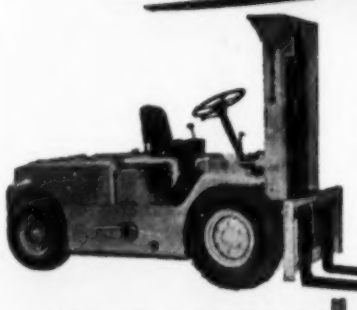
Shorter, Narrower, Faster, with greater power and Traction — and unmatched "INSIDE-OUTSIDE" versatility!

8000-LB. CAPACITY

HYSTER ZA-80

The ideal "OUTSIDE-Inside" Truck.

Has long wheelbase, but SHORT OVER-ALL. For use where most of work is *outside,* but truck *also* works inside in close quarters. Pneumatic tires. Write for Bulletin 1230.



HYSTER COMPANY

THREE FACTORIES

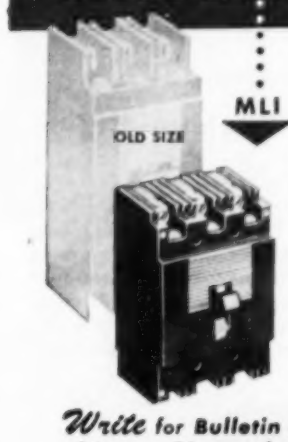
2916 N. E. Clackamas, Portland 8, Ore.
1816 North Adams . . Peoria 1, Illinois
1016 Myers Street . . . Danville, Illinois

Get the whole Hyster "Inside-Outside" story before you buy any Lift Truck! Ask your Hyster Dealer or write for Bulletins 1230, 1231.

If you write maker identify as IEN - 1570

small

100 Ampere Frame • 600 Volt CIRCUIT BREAKER



MLI This compact breaker has all the construction features of the larger 100, 225 and 600 ampere frames—yet it's 50% smaller.

Available in 15, 20, 30, 40, 50, 70 and 100 amperes at 600 volts.

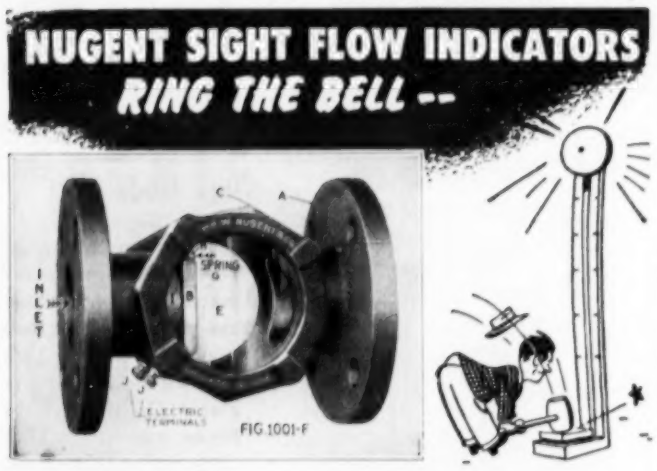
Write for Bulletin 600 for complete description of Square D's complete line of THERMAL-(Coilless) MAGNETIC Circuit Breakers . . . Address Square D Company, 6060 Rivard St., Detroit 11, Michigan.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 1571

NUGENT SIGHT FLOW INDICATORS *RING THE BELL --*



Install a Nugent alarm type sight flow indicator on your machinery oiling system and put an end to lubricating worries. Here's the sight flow that tells you, by ringing an alarm bell, when oil is not getting to bearings. Figure 1001 F illustrated here can be wired to any spot in your plant. When oil is flowing properly indicator "B" is open. Interruptions cause "B" to close, make contact with terminals "J" and sound the alarm. This enables you to correct troubles quickly, protect valuable machinery and save on costly down time. Write for full details. Sizes from ½" to 6". Tapped or flanged connections. Removable windows. Can be installed right or left hand or vertically.

Wm. W. Nugent & Co., Inc.
418 N. Hermitage Ave. CHICAGO 22, ILLINOIS
Est. 1897

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . Representatives in Principal Cities

If you write maker identify as IEN - 1572

Control MAXIMUM PRODUCTION

with G. S. HAND TACHOMETERS and SPEED INDICATORS

1% Accuracy for any range from 30 to 100,000 RPM or surface speed.

Antimagnetic durable mechanism.

Efficient repair service at moderate charges.

IDEAL FOR
MOTORS — SHAFTS
SPINDLES — LOOMS
TURBINES — FOR TEXTILE AND POWER PLANTS

WRITE FOR ILLUSTRATED FOLDER

GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
198-C LAFAYETTE ST., NEW YORK 12, N. Y.

If you write maker identify as IEN - 1573

COUNTING . . Electronic equipment for frequency and time calculations

Source: POTTER INSTRUMENT CO.
113-17 Cutter Mill Road, Great Neck, N. Y.

For any counting function

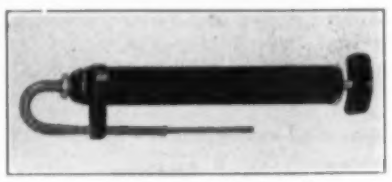
Models 820 and 830, for accurate frequency counting in production, and Models 840 and 850, for frequency-time calculations, are new in the company's line of electronic counting equipment. The first two, for production use, can be supplied with the company's 1-2-4-8 decimal readout or with its 10-lamp, 0 to 9 readout. A bracket kit for rack mounting permits access to the counter on slides.

Models 840 and 850 contain the counting equipment and also provide for direct counting frequencies to one megacycle or to time the period of a cycle within 10 microseconds. Elapsed time is measurable in increments variable from 10 microseconds to one second. Two unknown frequencies can be compared to obtain a ratio or an external standard can be introduced for a higher accuracy time base.

If you write maker identify as IEN - 1574

TESTING . . Smoke spot pump draws flue sample through filter paper

Source: BACHARACH INDUSTRIAL INSTRUMENT CO.
7303 Penn Ave., Pittsburgh 8, Pa.



Smoke discolors the paper

Smoke content in a flue can be tested by means of this True-Spot pump. It is suited particularly to check the operation of oil burners. It consists of the pump, a flexible armored sampling tube and a slot in which a 7½-in. strip of filter paper is applied.

The pump handle is drawn out, after the sampling tube has been inserted into the flue, to draw the smoke sample through the filter paper into the pump body. The resulting discoloration on the paper is then compared with nine shadings on a soot scale supplied for this purpose. Complete equipment includes a supply of filter paper for 150 tests.

Identify as IEN - 1575

Here's how to keep track of tube replacements in your fluorescent lighting fixtures and probably save yourself a good bit of expense in efficient lighting as well as tube conservation. Get a roll, or several, of Labelon plastic self-adhesive marking tape. Have your lamp maintenance man use it to mark the date of replacement so a record can be kept. He affixes a little piece of the tape and marks the date with any pointed instrument. The tape protects the resulting mark for any length of time.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1576

UNIT 357 MOBILE CRANE

• Self-Propelled
• Rides on Rubber
• Has 1001 Uses

Speed Up Material Handling

Here's a handy, mobile crane for lifting or loading jobs around your plant. Ideal for dismantling, moving or erecting machinery . . . loading and unloading structural iron, pipe, bars, lumber and equipment of all types. The UNIT 357 is self-propelled . . . rides on rubber at road travel speed . . . is easy to maneuver even in cramped yard conditions. Operated by ONE man . . . powered by ONE engine . . . swings in a 360° circle. Full vision cab gives complete visibility. Promotes Safety. Write for Catalog.

UNIT CRANE & SHOVEL CORP.
6605 W. Burnham Street, Milwaukee 14, Wis., U. S. A.

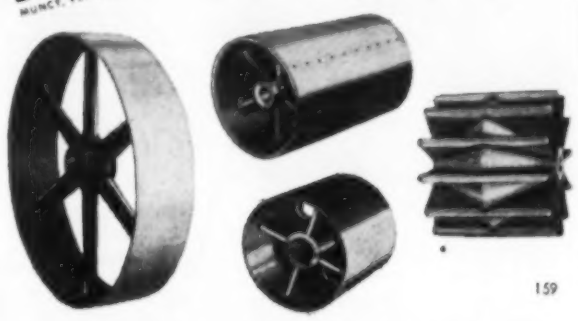
UNIT
CRANES • CLAMSHELLS • MAGNETS

If you write maker identify as IEN - 1577

SPROUT WALDRON S/W PULLEYS

MUNCY, PENNSYLVANIA

SOLID FACE and BELT SAVER



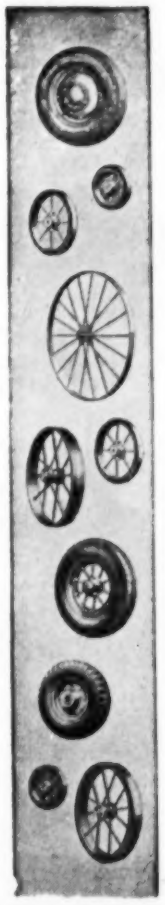
In handling rough, abrasive materials, S/W exclusive Belt Saver Pulleys are lengthening belt life as much as 400%. Equally well recognized is the S/W Blue Face Pulley Line in standard and made-to-order types and sizes. Write today for literature.

Sprout-Waldron & Co., Inc.,
5 Logan Street, Muncy, Penna.

Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

SPROUT-WALDRON

If you write maker identify as IEN - 1578



TRUCKS AND TRAILERS MOVE FASTER, EASIER ON NEW WHEELS BY *ELECTRIC*

Modernize baggage-trucks, industrial trailers, floor trucks, mail carts and other portable equipment with new ELECTRIC wheels **for faster, easier handling.** There is an ELECTRIC wheel for every job.

Our 65 years of engineering "know-how" assures you of top performance from ELECTRIC equipment.

ELECTRIC wheels are furnished with or without roller bearings to fit your own axles or complete with axles—steel tires, molded-on-tires, or pneumatic tires. All types are available in a full range of sizes.

Our experienced engineers are always at your service.

WRITE FOR COMPLETE INFORMATION
ELECTRIC WHEEL CO.
2814 SPRUCE • QUINCY, ILLINOIS

If you write maker identify as IEN - 1579

CURE RPM HEADACHES

U.S. VARIDRIVE MOTOR

2 to 10,000 RPM

WHEN designing a machine, avoid "rpm headaches" of fixed speed selection. Install a U. S. Varidrive Motor so that your machine can be operated at any and all speeds. *Eliminate guesswork.* Your machine speed can be instantly matched to each specific job or condition by turning a convenient control dial on the Varidrive. Increase performance by adopting the most modern of all drives—*Varidrive.*

Ask for new U.S. Varidrive Bulletin.

U.S. MOTORS

U.S. ELECTRICAL MOTORS Inc.
Box 2058, Los Angeles 54, Calif., or Milford, Conn.

If you write maker identify as IEN - 1580

Easy-low cost

RESOLITE SKYLIGHTING, and *NO MAINTENANCE!*

For skylighting new or old corrugated sheet buildings, just lap in sheets of translucent, corrugated RESOLITE — no framing, no flashing, no caulking!

And you can eliminate daytime lighting costs through Resolite's excellent interior diffusion of daylight.

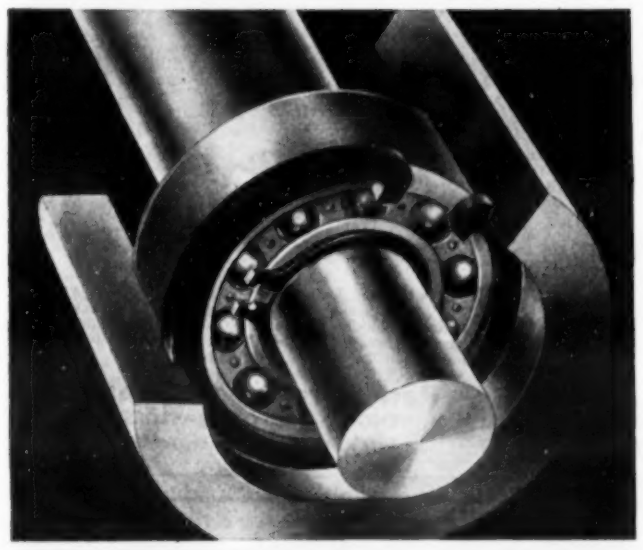
Rugged Resolite is a Fiberglas-reinforced resin plastic; it's shatterproof, weatherproof and inert to ordinary acid or alkali industrial fumes.

Investigate Resolte for skylighting your industrial buildings — TODAY! For complete information and name of your nearest distributor, write:

RESOLITE CORP., Rt. 19, Zelienople, Pa.

If you write maker identify as IEN - 1581

Save Time
Save Materials
Save Money!



Examine the designs of **all** your products and machines. No doubt you can use retaining rings on axles and in housings – not **only to save assembly time, but to save weight, parts and space.**

The use of these inexpensive yet efficient artificial shoulders is already widespread, and is increasing daily.

There are literally thousands of places in which redesigning for retaining rings can increase your profits and improve your products – uses ranging from heavy duty engines and drill presses to toys, gadgets and small parts of innumerable articles.

It's wasteful to cut down shafts to make shoulders. Redesign to groove smaller shafts and housings and use these high grade steel rings.

Let our engineers consult with you. Send for folders.

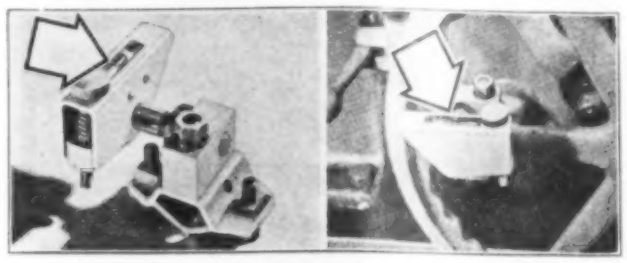
Don't pass up this opportunity to increase profits.

THE NATIONAL LOCK WASHER CO.
NEWARK 5, NEW JERSEY • MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN - 1583

GAGE . . Spirit level attachment shows "stop" position on a machine

Source: PEKAY STEEL FABRICATORS
863-67 N. Sangamon St., Chicago 22, Ill.



About $20

Depthmaster is a new clamp-on attachment to apply on a spoke of the feed wheel on a turret lathe or a hand screw machine, or on any other machine tool in which a rotating element operates in relation to the feed movement. The attachment mounts a spirit level tube in adjustable arrangement so the bubble can be set to show centrally between its level limit lines when "stop" position has been reached. It is shown to the right in the illustration on a feed wheel spoke in a normal installation. Stop position can be duplicated from one work piece to the next within a thousandth.

If you write maker identify as IEN - 1584

MARKING . . Black ink for printing or writing on plastics

Source: PHILLIPS PROCESS CO.
198 Mill St., Rochester 4, N. Y.

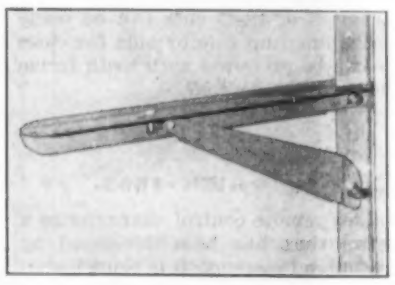
For clear indelible mark

Clear Print No. 40 is a new opaque black ink. It has been developed to mark plastic magnetic recording tapes with a rubber stamp or a pen or to print or mark on any plastic surface. Packaging is in bottles ranging from an ounce to one gallon as standard unit quantities.

If you write maker identify as IEN - 1585

STORING . . Shelf bracket positions level or at adjustable angle

Source: S. A. HIRSH MFG. CO.
8049-53 Central Park, Skokie, Ill.



For display shelves

Hirshlok trade names a new two-part shelf bracket with pivoted members and an adjusting screw where the two parts join. Pins position the rear ends at various elevations in an upright member. Depending on the position of the support member, the normally level member will be either horizontal or at an angle. The angle can be set approximately and then adjusted to an exact position by turning the knurled screw.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1586

WISSCO STEEL PROCESSING BELT

Turn your products out faster, more economically in continuous straight-line production with a Wissco Belt. To order, write or call our nearest sales office.

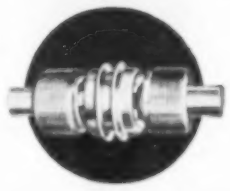
THE COLORADO FUEL AND IRON CORPORATION—Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Atlanta • Boston • Buffalo • Chicago • Detroit • New York • Philadelphia

1431

WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION CF&I

If you write maker identify as IEN - 1587

Fights Big Fires With



—High Pressure Fog

The Hale MULTI-SERVICE PUMP for fire-fighting engines, must supply 500 to 600 gallons per minute at 600 to 700 pounds pressure P.S.I. ROCKFORD CLUTCHES provide the power transmission control required for reliable high impeller speed. Let ROCKFORD clutch engineers help with *your* difficult power transmission problems.

B-W ENGINEERING MAKES IT WORK
B-W PRODUCTION MAKES IT AVAILABLE

ENGINEERING BULLETIN SENT ON REQUEST

ROCKFORD CLUTCH DIVISION BORG-WARNER
303 Catherine Street, Rockford, Illinois, U. S. A.

ROCKFORD CLUTCHES

If you write maker identify as IEN - 1588

ENGINEERED SIMPLICITY
wheelco
CAPACILOG strip chart RECORDER

For operational accuracy and mechanical stamina, use the Capacilog Recorder in the measurement and recording of AC and/or DC voltage, amperes, wattage and other electrical values.

Design simplicity expedites cleaning and eliminates maintenance problems. A plug-in chassis facilitates quick replacement or change-over.

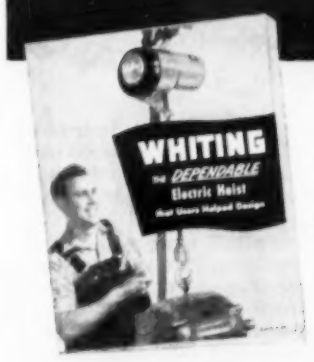
BULLETIN C2 WILL BRING YOU FACTS WORTH HAVING IN YOUR FILE

wheelco instruments division
BARBER-COLMAN COMPANY
1204 ROCK ST. • ROCKFORD, ILLINOIS

If you write maker identify as IEN - 1589

LIFT at Lowest Cost!

GET THIS BOOKLET FOR FACTS ON THE HOIST THAT WILL SERVE YOU BEST!



Read *why* the Whiting Electric Chain Hoist is the *lowest* in operating cost . . . *why* it is the *safest* hoist and the *easiest* to operate. And read about the *exclusive* Whiting Warranty Plan, too. All this information, plus data on models and capacities is contained in Bulletin H-112. Write for a free copy now!

WHITING CORPORATION 15629 Lathrop Ave. • Harvey, Illinois

WHITING
ELECTRIC CHAIN HOIST

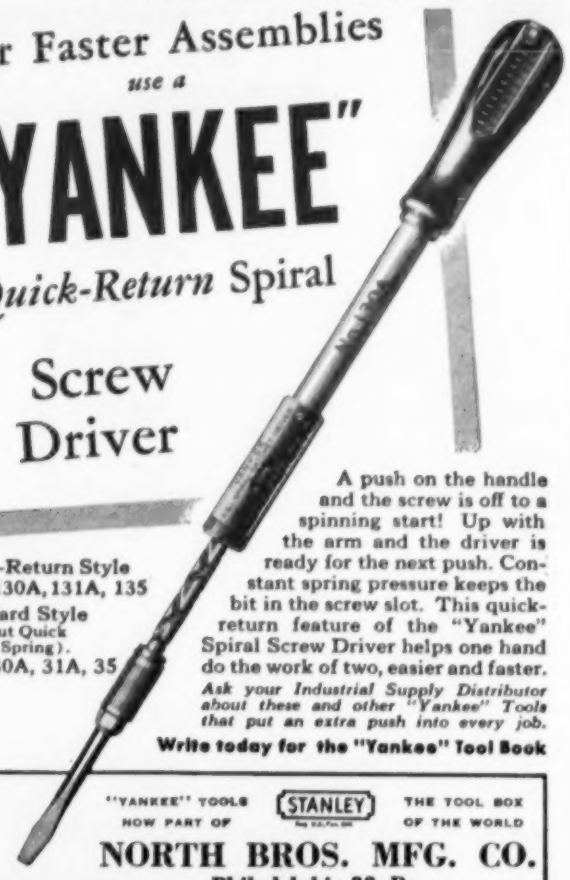
If you write maker identify as IEN - 1590

For Faster Assemblies
use a

"YANKEE"

Quick-Return Spiral

Screw Driver



A push on the handle and the screw is off to a spinning start! Up with the arm and the driver is ready for the next push. Constant spring pressure keeps the bit in the screw slot. This quick-return feature of the "Yankee" Spiral Screw Driver helps one hand do the work of two, easier and faster.

Ask your Industrial Supply Distributor about these and other "Yankee" Tools that put an extra push into every job.

Write today for the "Yankee" Tool Book

Quick-Return Style
Nos. 130A, 131A, 135
Standard Style
(without Quick Return Spring).
Nos. 30A, 31A, 35

"YANKEE" TOOLS NOW PART OF STANLEY THE TOOL BOX OF THE WORLD

NORTH BROS. MFG. CO.
Philadelphia 38, Pa.

If you write maker identify as IEN - 1591

DO YOU HAVE A HOPPER FEEDING PROBLEM? HERE'S THE ANSWER...

Effective all-directional vibration for moving stubborn materials in hoppers and bins. Instantly self-starting, no lubrication or maintenance needed. A variety of sizes available to meet all applications.

Rugged, effective vibration without damage to your bins and hoppers when you use the patented Peterson pneumatic VIBROLATOR.

WRITE for complete description, installation data and sizes —

MARTIN ENGINEERING COMPANY
KEWANEE 2, ILLINOIS

If you write maker identify as IEN - 1592

STAMPINGS
PILOT RUNS

Special methods produce small quantities at minimum cost.

When you need just a few pieces —when you're still in the experimental stage — then an economical, cooperative source of parts is important.

Our **Machine-Cut Method** avoids custom die costs completely by use of special machinery which skillfully fashions pilot quantities.

Careful calculation determines the point at which labor costs warrant our **Short Run Method,** which uses simple contour dies and special presses.

Best of all, when you get into large quantities on the experimental part, our STAMPINGS DIVISION is still your most economical producer, using our **Production Method.** Thus all three methods are at your disposal. And impartial choice of method *saves money* for you!

SEND FOR LITERATURE

STAMPINGS DIVISION
"ONE PIECE OR ONE MILLION"

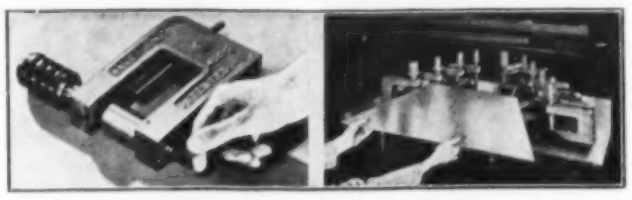
LAMINATED SHIM COMPANY, INC.

2102 UNION STREET • GLENBROOK, CONNECTICUT

If you write maker identify as IEN - 1593

PRESS TOOLS . . Punch and die units set in multiple to template or layout

Source: WALES-STRIPPIT CORP.
361 Payne Ave., North Tonawanda, N. Y.



Ask for Illustrated Catalog CJ

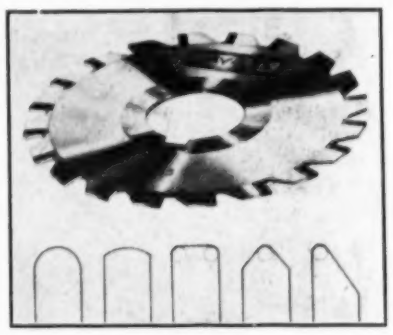
Interchangeable dies are made with a slip fit in the holder for this new design of the company's Type-CJ hole punching units. They are secured in position by a threaded pilot pin that is tightened or removed with a hexagon wrench. The new arrangement permits quick change of the dies in one or a number of units set up to a desired hole pattern.

Set-ups are made on T-slotted plates or templates. No physical connection is required to the press ram, each assembly carrying its own punch, die and stripping mechanism. The line includes three holder widths with maximum punch diameter at ¾ in. for mild steel to ¼ in. in thickness.

If you write maker identify as IEN - 1594

SAWING . . Circular blade, carbide tipped for precision slitting

Source: GAY-LEE CO.
69-73 W. 14-Mile Road, Clawson, Mich.



Typical forms

Convex forms including radius and radius with angles tangent, as well as a number of variations, are now available to specification in the company's line of Thinsaws, previously described IEN-809-52. At the same time, the range of sizes has been increased to 8 in. from a previous maximum of 5 inches. Thickness starts at 0.03 inch.

The carbide tips are assembled by brazing in circular seats for which patent has been applied. Deep cuts can be made without runout. Blades can be lined up side by side for close multiple cutting. The blade can be produced with tooth forms so resharpening does not destroy the contour.

Identify as IEN - 1595

Fast action and provision for remote control characterize a new electronic brake control that has been developed by Warner Electric Brake and Clutch Company. It is being manufactured at present only for the Armed Forces but is expected to be available shortly to apply in industrial applications. Actuation interval, following an impulse, is 0.005 second. A double circuit takes care of possible failure in either one. A condenser stores electric power for emergency use.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1596

STONEHOUSE SIGNS FOR ACCIDENT PREVENTION

TO KEEP PRODUCTION UP ...KEEP ACCIDENTS DOWN

Safeguard the worker against hazards and accidents—with the help of

STONEHOUSE SIGNS

Made in accordance with "American Standards Ass'n Specifications for Accident Prevention Signs"—the only authentic standards.

Write for complete Catalog No. 9, showing hundreds of different stock-worded Accident Prevention signs. It's free on request.

Stonehouse SIGNS, inc. MANUFACTURERS
Stonehouse Building · 842 Larimer · Denver 4 Colo.
"SIGNS SINCE 1863"

ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS

If you write maker identify as IEN - 1597

Exactly how much weight do you throw?

Ten inch ounces or 2000 ft. lbs.? Whatever it is, it pays to know when tightening nuts, bolts, screws, or studs. And with Apco Mossberg Torque Wrenches you can know . . . instantly and precisely!

Like no other torque wrench of comparable size or style, an Apco Wrench measures the exact final tension on precision fasteners with the slightest pressure on the handle. Your dial readings are instantaneous and unerringly accurate . . . there are no springs or intricate parts to get out of order. Your work is made easier . . . large, quick-vision numerals and narrow heads simplify measurements in awkward places. Best of all, with Apco there's a wrench for every job in the shop — a complete range of sizes, from 280 inch grams to 2000 ft. pounds.

It pays to standardize with Apco Mossberg Torque Tools for Industry. Write today for complete details.

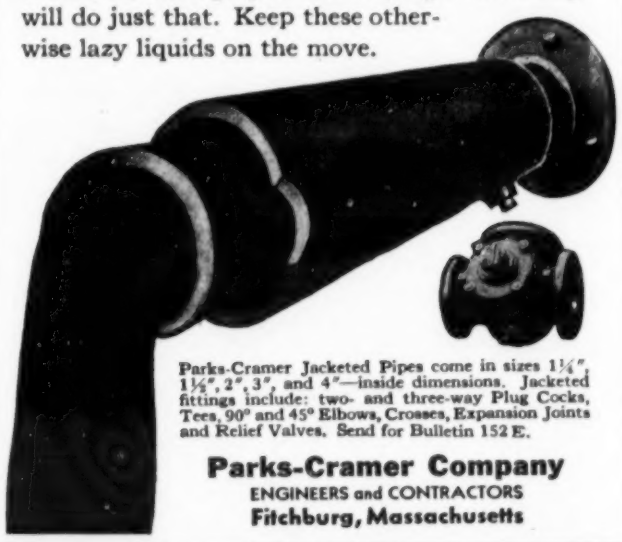
APCO MOSSBERG CO.
ATTLEBORO, MASS.

If you write maker identify as IEN - 1598

LAZY LIQUIDS
KEPT ON THE MOVE

Maybe it is Asphalt, Rosin, Wax, Sulphur, Syrup or some other LAZY Liquid. Heat them and they flow more readily. Heat the pipes that convey them also—and they continue to flow.

Steam, Hot Water, Hot Oil, or Dowtherm circulated through Jacketed Piping and Fittings will do just that. Keep these otherwise lazy liquids on the move.



Parks-Cramer Jacketed Pipes come in sizes 1¼", 1½", 2", 3", and 4"—inside dimensions. Jacketed fittings include: two- and three-way Plug Cocks, Tees, 90° and 45° Elbows, Crosses, Expansion Joints and Relief Valves. Send for Bulletin 152 E.

Parks-Cramer Company
ENGINEERS and CONTRACTORS
Fitchburg, Massachusetts

If you write maker identify as IEN - 1599

NOW!.....the BIGGEST single sheet of TEFLON ever made!

Order this outstanding insulating material in sizes up to *60" x 72"*—and save money, time and headaches.

If you have used large gaskets laminated from the old small sheets of TEFLON, you've faced problems like blow-through and leakage. And you have fretted about waste, if you've had to cut two 13" discs—because that meant using *two* of the old 24" x 24" sheets—and throwing away the unused portions.

You pay no more per square inch for the new TEFLON size to get trouble-free gaskets, to get more cuttings per sheet. Requires less handling. Excellent for chemical table tops, other uses. Write today for specifications and TEFLON Brochure #201.

ELECTRONIC MECHANICS INC.
101 CLIFTON BOULEVARD, CLIFTON, NEW JERSEY

If you write maker identify as **IEN - 1600**

Quick as a wink measure both AC and DC

WITH A COLUMBIA TONG TEST AMMETER

(Voltage attachment available)

- Both AC and DC ampere readings are made instantly and accurately without breaking circuit or scraping insulation
- Operated with one hand by merely clamping tongs around conductor
- Cannot burn out
- Scale ranges up to 1000 amperes AC or DC
- Voltage attachment reads up to 600 volts
- Five types to accommodate cables up to 3⅞", bus bars up to 4½"x½"

Write for Tong Test Bulletin IQ-400

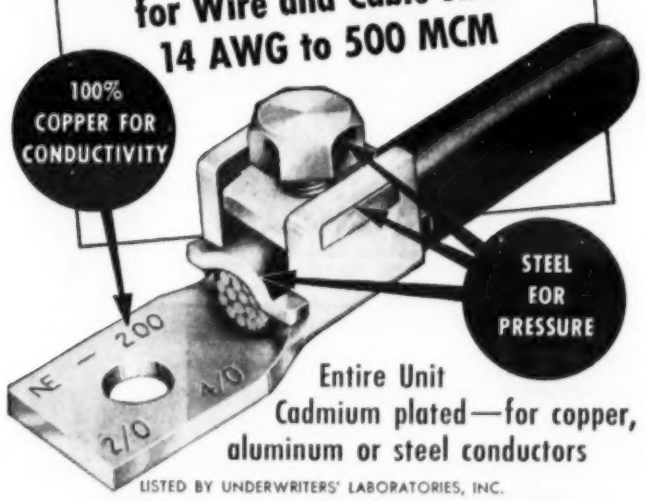
COLUMBIA ELECTRIC MFG. CO.
4519 Hamilton Ave., Cleveland 14, Ohio

If you write maker identify as **IEN - 1601**

NOW—Make your connections with "Wide Range"

5 NE WIDE RANGE PRESSURE LUGS *are all you need*

for better electrical installations for Wire and Cable Sizes 14 AWG to 500 MCM



Entire Unit Cadmium plated—for copper, aluminum or steel conductors

LISTED BY UNDERWRITERS' LABORATORIES, INC.

- ADAPTABLE
- ONE-PIECE ASSEMBLY
- WIDE RANGE
- POSITIVE GRIP ACTION
- LOW TEMPERATURE RISE
- ECONOMICAL

Write for folder giving dimensional details, catalog numbers and other helpful information on National Electric "Wide Range" Pressure Lugs.

Catalog Number	Cable Size Range	
	Minimum	Maximum
NE 35	14 Sol.	8 Str.
NE 60	8 Sol.	2 Str.
NE 100	2 Str.	1/0
NE 200	2/0	4/0
NE 400	250 MCM	500 MCM

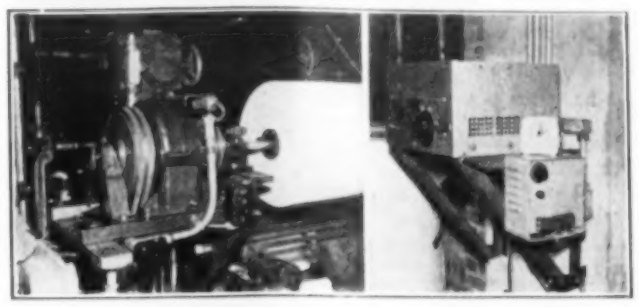
EVERYTHING IN WIRING POINTS TO

National Electric Products
PITTSBURGH, PA.
3 Plants • 7 Warehouses • 33 Sales Offices

If you write maker identify as **IEN - 1603**

CONTROL . . Electronic equipment regulates tension in winding operation

Source: W. T. HOWALD MACHINE WORKS
180-84 Sigourney St., Brooklyn 31, N. Y.



Company designs, builds, installs

The company announces new design of the Frankel tension control, previously described IEN-1113-52. Application is on equipment employed in winding or unwinding rolls of web materials such as film, paper, textiles, rubber, foil or filaments such as yarn or wire. The control mounts on the processing machine and is supplied to meet given service requirements in a tension range from zero to several pounds per inch of web width. It is available also for tensions requiring torque as high as 800 foot pounds. Adjustments are made at a power conversion unit that mounts in remote position.

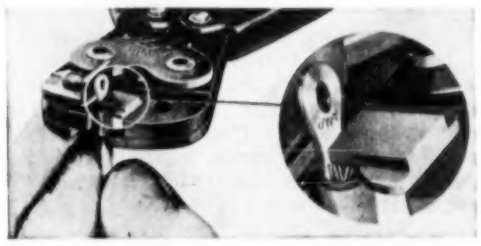
Control is actuated by a "dancer" roll that rides in a loop of the web or filament formed by movement over two stationary idler rollers between the point of origin and the wind-up roll on a winding operation. Loading is applied adjustably to the dancer roll by suitable means to move the roll down as tension tends to decrease and to resist movement upward on increasing web tension.

This movement is employed to feed variable low voltage dc. to an oil immersed electromagnetic clutch for wind-up control or a brake for unwind action. The clutch or brake is mounted into the drive assembly of the machine.

If you write maker identify as **IEN - 1604**

CONNECTOR . . Crimping tool closes solderless unit on wire end

Source: AIRCRAFT-MARINE PRODUCTS INC.
2102 Paxton St., Harrisburg, Pa.



For wires with thin insulation

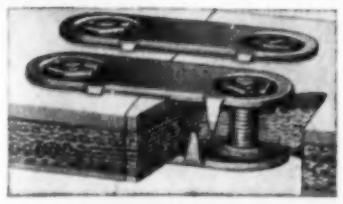
New design of the company's Certi-Crimp hand tool, with which its solderless connectors are applied on the ends of conductor wires, includes a stop mechanism known as Shur-Stop. The new unit applies when connectors are to be crimped upon the ends of Deltabeston, Neolay and similar wires with very thin insulating sheaths. The stripped wire is stopped at its correct position to prevent the insulation from being inserted in the connector barrel. A guide positions the connector.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1605**

FLEXCO® BELT FASTENERS and RIP PLATES

FOR HEAVY CONVEYOR AND ELEVATOR BELTS OF ANY WIDTH



Compression Grip distributes strain over whole plate area

- ★ FLEXCO Fasteners make tight butt joints of great strength and durability.
- ★ Trough naturally, operate smoothly through take-up pulleys.
- ★ Distribute pull or tension uniformly.
- ★ Made of Steel, Monel, Stainless, Everdur. Also Promal top plates.
- ★ FLEXCO Rip Plates are for bridging soft spots and FLEXCO Fasteners for patching or joining clean straight rips.

Order From Your Supply House. Ask for Bulletin F-100

FLEXIBLE STEEL LACING CO.
4610 Lexington St., Chicago 44, Ill.

If you write maker identify as **IEN - 1606**

KOHLER ENGINES

Power for garden tractors, mowers, pumps, sprayers, snow removal equipment, elevators and hoists, portable saws, concrete mixers, compressors, grinders, industrial and lift trucks, and a wide range of tools and equipment for industry construction, farm and home.

Engineered and built to the quality standards that have won acceptance for Kohler Electric Plants the world over.

Write for information on distributor's sales franchise.

Kohler Co., Kohler, Wisconsin, Established 1873

KOHLER OF KOHLER

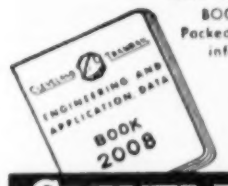
PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS, AIR-COOLED ENGINES • PRECISION CONTROLS

If you write maker identify as **IEN - 1607**

Inexpensive Hand-Propelled Crane with Chain Hoist

If hard, back-breaking work is required on the part of several men to move a machine in your plant, you should seriously consider either hand-propelled or electric Cleveland Tramrail cranes. Work that requires hours can often be done in minutes with an overhead crane. Many cranes pay for themselves in only a few months time.

GET THIS BOOK!
BOOK No. 2008
Packed with valuable information...



CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO
4236 East 285th St., Wickliffe, O.

CLEVELAND TRAMRAIL

If you write maker identify as **IEN - 1608**

new method of **process heating** and **cooling**

*saves 50%

- *in initial cost
- *in heating and cooling time
- *in tank space
- *in maintenance labor

Each member of your buying committee should have this book which tells how Platecoils satisfactorily solve tank heating and cooling problems . . . and at the same time save time, money and manpower.

PLATECOIL REPLACES PIPE COILS

Write for your free copy of Bulletin P56 today!

KOLD-HOLD MANUFACTURING CO., LANSING, MICH.

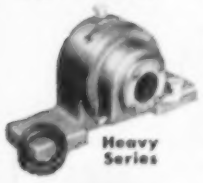
If you write maker identify as IEN - 1609

Economy Packages

FAFNIR PILLOW BLOCKS

The great variety of types and sizes of Fafnir Ball Bearing Power Transmission Units makes possible precise selection to meet exact specifications. Units feature the Fafnir Wide Inner Ring Ball Bearing with Self-Locking Collar . . . easiest of all to install . . . replaceable if necessary.

In Pillow Blocks, Fafnir offers single and double bearing types. Single bearing types available in light, standard, and heavy series . . . self-aligning or fixed and floating. For complete details call your Fafnir distributor or write The Fafnir Bearing Company, New Britain, Conn.



FAFNIR
BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

If you write maker identify as IEN - 1610

Tempilstiks°

the amazing crayons that tell working temperatures from 113° to 2000° F.

in
welding
flame-cutting
tempering
forging
casting
molding
drawing
straightening
heat-treating
in general

$2 each
gives up to 2000 readings

It's this simple: Mark the workpiece with the proper Tempilstik° When the mark melts, the specified temperature has been reached.

Available at these temperatures (°F)							
113	200	288	375	650	1000	1350	1700
125	213	300	388	700	1050	1400	1750
138	225	313	400	750	1100	1450	1800
150	238	325	450	800	1150	1500	1850
163	250	338	500	850	1200	1550	1900
175	263	350	550	900	1250	1600	1950
188	275	363	600	950	1300	1650	2000

Also available in pellet and liquid form

FREE SAMPLE PELLETS
Use this coupon. Specify temperatures of interest to you.

TEMPIL° CORP., 11 West 25th St., N. Y. 10, N. Y.

Please send free sample pellets in the following rating _____

Name _____

Company _____

Address _____

Booth No. 188, National Metal Show, Philadelphia

If you write maker identify as IEN - 1612

GRINDING . . Precision machine for single point carbide cutters

Source: EX-CELL-O CORP.
1202 Oakman Blvd., Detroit 32, Mich.

Operates wet or dry

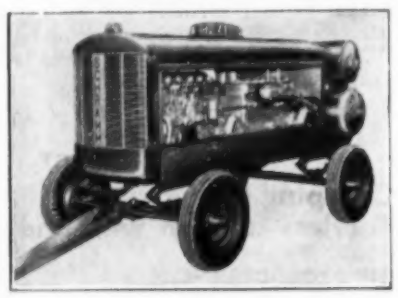
Style 44-A is a new double and precision grinding machine. It mounts two 6-in. cup wheels. It will take all sizes of single point boring, turning and facing tools to ⅝ in. square or equal section. A U-shaped table is pivoted at each wheel with provision to set at required angles in connection with adjustment scales that read in degrees.

The wheel spindle is mounted in the company's precision ball bearings for both radial and thrust load. The driving motor is reversible. Coolant is circulated by a separate motor driven pump. Control centers at push buttons on the face of the housing. A hood encloses the wheels. In addition to grinding carbide cutters, the machine will sharpen cast alloy and high speed steel tools in single point design.

If you write maker identify as IEN - 1613

COMPRESSOR . . Portable assembly with semi-diesel engine, 210 cfm.

Source: SCHRAMM INC.
800 E. Virginia Ave., West Chester, Pa.



Features fuel economy

Model 210 designates the company's newest design of wheel mounted engine driven air compressor. It employs the company's Dezoil 6-cylinder engine which rates 76 hp. at 1,200 rpm. Diesel fuel is injected into the cylinders by American Bosch equipment. A Bosch magneto is employed for ignition. Operating control centers in the Schramm Pneumastat. It regulates the compressor for continuous operation between part capacity and full capacity without loading or unloading action. The pneumatic tired mounted assembly, shown in the illustration, measures 129 by 67 by 67 inches. It weighs 4,370 pounds. Engine and compressor each employ six cylinders with 4½-in. bore and 4¾-in. stroke.

Identify as IEN - 1614

American Society of Tool Engineers announces election of the first five member trustees for its National Engineering Research Foundation. Plans call for use of industrial laboratories, colleges and universities to carry out research projects. The Society has appropriated $75,000 as its initial contribution to implement the work. The Government is currently permitting tax deductions to 5 per cent of income to industrial organizations to support non-profit research projects.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1615

Find out how you can cut costs of

SMALL METAL PARTS

Send for this NEW FOLDER . . .

. . . plus SAMPLES

SMALL ZINC DIE-CASTINGS
1000 per lb. to 3 per lb.

High speed automatic production
Two or more parts made as one
Cut machining operations

made in **DOLLIN's** *special* SMALL CASTINGS DEP'T

DOLLIN CORPORATION, 630 So. 21st St., Irvington, N. J.

If you write maker identify as IEN - 1616

How fast can you find *ENGINEERING DRAWINGS?*

A new job comes up in the engineering department and you want to incorporate the engineering and detailing from your present drawings. How fast do you find the time-proven and time-savings ideas of your past experience?

All over the country, engineering departments find it with Filmsort—the easy way to store bulky drawings for quick and active reference. They microfilm drawings of all sizes, file the film in uniform cards as small as 3x5", and find the Filmsort cards quicker than the original drawings.

There's no work in examining hundreds or thousands of drawings with Filmsort. There's no extra cost for unnecessary prints. There's no need to re-do the work of your past experience. Your engineers and detailers get the layout quicker with Filmsort.

FILMSORT Individualizes Microfilm!

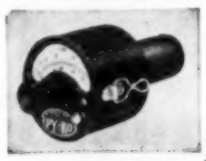
...IT'S IN THE CARDS

WRITE FOR FULL DETAILED INFORMATION TODAY!

FILMSORT INC.
DEPT. I, PEARL RIVER
NEW YORK

If you write maker identify as IEN - 1617

WHY GUESS THE TEMPERATURE
. . . when you can see it!



Just sight it . . . and press the button!

THE NEW PYRO RADIATION PYROMETER

Tells spot temperature instantly

– in heat-treating furnaces, kilns, forgings and fire boxes. No thermocouples, lead wires or accessories needed! Temperature is indicated on direct-reading dial at a press of the button. Any operator can use it. In two double-ranges for all plant and laboratory needs. *Write for FREE Catalog No. 100.*

PYRO OPTICAL PYROMETER

Accurate temperatures at a glance!

Any operator can quickly determine temperatures on minute spots, fast-moving objects and smallest streams. Completely self-contained. No calibration charts or accessories needed. An accurate, direct reading Pyrometer that pays for itself by helping prevent spoilage. Weight 3 lbs. Available in 5 temperature ranges (1400° F. to 7500° F.). Ask for *free* Catalog No. 80.

THE PYROMETER INSTRUMENT COMPANY
New Plant and Laboratory
Bergenfield 21, N. J.

If you write maker identify as IEN - 1618

SEE FOR YOURSELF—Next time try a

FORT WORTH TRANSCO QD SHEAVE

FORT WORTH WAREHOUSES MEAN BETTER V-DRIVE SERVICE

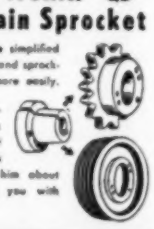
You will receive the best in service, sheaves, and V-belts when you buy a Fort Worth-Transco V-drive.

Two manufacturing plants and a large foundry, designed to make sheaves, assure volume production even in periods of short supply. Factory warehouses in most large industrial centers supplemented by numerous stocking distributors provide quick delivery of stock sizes.

We will be pleased to advise you the name of your nearest stocking distributor.

"QD" HUB ALSO FITS NEW FORT WORTH "QD" Roller Chain Sprocket

Speed changes are simplified and "spare" sheaves and sprockets can be carried more easily.



If your favorite distributor doesn't stock the Fort Worth QD line — both sheaves and sprockets, tell him about them. He'll reward you with better service.

Write for descriptive catalogs on "QD" Sprockets and Sheaves, and they will be sent to you immediately.

OTHER FORT WORTH PRODUCTS
ROLLER CHAIN SPROCKETS
SCREW CONVEYORS and ACCESSORIES
SCREW ELEVATORS
INDUSTRIAL FANS

FORT WORTH STEEL AND MACHINERY CO
Dept. 22, 3600 McCart St., Fort Worth, Texas

If you write maker identify as IEN - 1619

THE
HI-GAIN Industrial POCKETSCOPE
MODEL S-14-A ©BY WATERMAN

Identified by its hi-sensitivity and incredible portability, S-14-A POCKETSCOPE now permits "on-the-spot" control, calibration and investigation of industrial electronic, medical and communications equipment. Direct coupling without peaking, used in the identical vertical and horizontal amplifiers, eliminates undesirable phase shifting. Designed for the engineer and constructed for rough handling.

Wt. 12¾ lbs. 12" x 5¾" x 7"

Vertical and horizontal channels: 10mv rms/inch, with response within—2DB from DC to 200KC and pulse rise of 1.8 μs. Non-frequency discriminating attenuators and gain controls with internal calibration of trace amplitude. Repetitive or trigger time base, with linearization from ½cps to 50KC with ± sync. or trigger. Trace expansion. Filter graph screen. Mu metal shield. And a host of other features.

WATERMAN PRODUCTS CO., INC. PHILADELPHIA 25, PA.
CABLE ADDRESS: POKETSCOPE

WATERMAN PRODUCTS INCLUDE.

S-4-A	SAR	PULSESCOPE
S-5-A	LAB	PULSESCOPE
S-10-B	GENERAL	POCKETSCOPE
S-11-A	INDUSTRIAL	POCKETSCOPE
S-14-B	WIDE BAND	POCKETSCOPE
S-15-A	TWIN TUBE	POCKETSCOPE

Also RAKSCOPES, LINEAR AMPLIFIERS, RAYONIC TUBES and other equipment

WATERMAN PRODUCTS

If you write maker identify as IEN - 1620

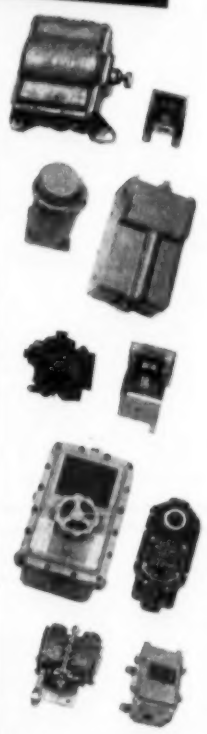
where there is
no room for failures...
you'll find NAMCO Switches and Solenoids

The 80,000-sq.-ft. plant shown below is an expansion forced upon us through the ever increasing demand by both new and old customers whose products demand a degree of switch and solenoid ruggedness and dependability never thought possible before the advent of the Namco line.

Important to most of our customers is the vast experience of our specialized engineers—helping determine correct capacities, housings, space, type of mountings, special problems etc.,—thus to insure the most practical Switch and Solenoid applications at lowest costs.

Approved by the Armed Services
For example, here is just one group of switch and solenoid devices supplied to the Army, Navy and Aircraft services wherein there is no room for failures. The list includes:

- *Water-resistant, highly sensitive units for submarines.*
- *High shock-resistant assemblies for synchronizing multiple gun fire, ashore and afloat.*
- *Remote-control switches for pin-pointing aircraft fire.*
- *Air Conditioning and Refrigeration master controls—and many others.*



Catalogs of Namco Switches (EM-51) and Solenoid (rM-52) explain patented advantages. Ask for them or, if you have a problem, ask your engineers to consult ours.

New home of Snap-Lock Switches and Namco "Stellite"-Welded Solenoids.

Electrical Manufacturing Division
THE NATIONAL ACME COMPANY
178 East 131st Street, Cleveland 8, Ohio

Acme-Gridley Bar and Chucking Automatics, 1-4-6 and 8 Spindle—Hydraulic Thread Rolling Machines—Automatic Threading Dies and Taps—Limit, Motor Starter and Control Station Switches—Solenoids—Contract Manufacturing.

If you write maker identify as IEN - 1622

INSULATING . . Felted glass fiber in rolls and specified die cut pieces

Source: GUSTIN-BACON MFG. CO.
1412 W. 12th St., Kansas City 7, Mo.

Sample on request

Ultrafine is a new fire-resistant glass fiber insulating material in batt or felted form. It provides a lightweight resilient material for both acoustical and thermal installation, the latter to 450 deg. F. The material has no odor and will not pick any up. It will not rot, mold or decay and is not corrosive to metals. It resists attack of most acids and alkalis and is a permanent insulating medium in both forms.

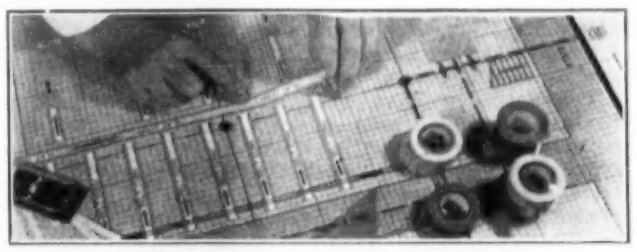
It can be cut with a knife or shears and applied to any type of heated and cooled equipment. Its flexibility and resilience permit it to conform to irregularly shaped objects without special fitting. Adhesives, wire, staples or twine can be employed to hold it in place.

Thickness ranges from ½ to 1½ in. and standard roll width is between 18 and 48 inches. Overall limits for width are 6 to 72 inches. Length varies from 150 to 200 ft. depending upon thickness. The material can be supplied plain or faced with various sheet materials such as aluminum foil adhered in place. Special shapes can be cut by the company to specified outline so this work need not be done in the user's plant or in the field.

If you write maker identify as IEN - 1623

LAYOUT . . Backed adhesive tape in printed patterns for plant layout

Source: CHART-PAK INC.
102-6 Lincoln Ave., Stamford, Conn.



Details and prices in Chart-Pak Bulletin

Pre-printed standard symbols, indicating building columns, aisles, conveyors, monorail track, service lines, shafts, stairways, are supplied on self-adhesive tape packaged in paper backed rolls in the company's new line of ¼-in. scale layout materials. The equipment includes patterns on both transparent and opaque tape, plastic layout boards and self-adhesive grid sheets for machine and equipment templates.

A selected tape can be cut from a roll and fitted into a layout prior to removing the backing strip so it will not adhere to the layout board until the final arrangement is satisfactory. Then the backing strip is removed and the printed tape is pressed down into place to become part of a finished layout. Rolls of the tape are supplied in 324 and 648-in. lengths and in widths from ⅛ to 2 inches. List price per roll is 90 cents to $3.35 over the range of sizes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1624

BOURNS
DUAL LINEAR MOTION POTENTIOMETERS

For AIRCRAFT *and* GENERAL INDUSTRY

Two Separate Circuits . . .
Designed for precise instrumentation in automatic control circuits for aircraft, guided missiles and general industry, BOURNS linear motion potentiometers accurately translate mechanical position or movement into two independent signals . . . one signal often used for feed-back control and the other for telemetering.

This dual instrument possesses all the advantages of two single potentiometers and in addition saves space, weight and installation time. With this wire-wound potentiometer a resolution of .001 inch is obtainable in standard ranges from 1 to 6 inches.

BOURNS designs and manufactures other potentiometer instruments which measure gage pressure, differential pressure, altitude and acceleration.

BOURNS LABORATORIES
6135 Magnolia Avenue, Riverside, California
Technical Bulletin on request, Dept. 119

If you write maker identify as IEN - 1625

THEY'VE GOT WHAT IT TAKES TO HANDLE ANY JOB AND KEEP A TIGHT GRIP ON RISING COSTS!

ILLINOIS GLOVES
ARE BUILT TO LAST

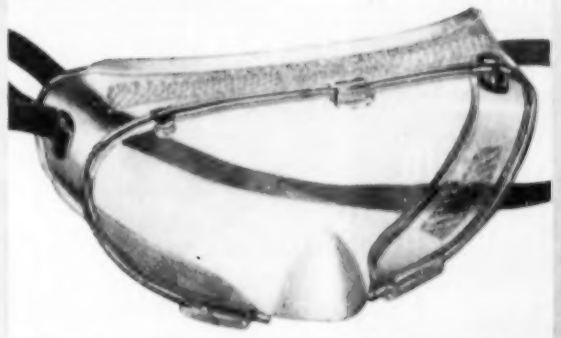
Illinois Gloves are made to stand up under the hardest wear . . . they're thoroughly tested for abrasion and tensile strength when in contact with oil, acids, heat or water. And because Illinois Gloves give you longer, better service, they're your most economical buy in the long run!

Write Industrial Division Illinois Glove Company for catalog & prices

ILLINOIS GLOVE CO., CHAMPAIGN, ILL.

If you write maker identify as IEN - 1626

WILLSON MonoGoggles®



Keep You on the Safe Side

- Wide angle vision
- Replaceable lens – clear or green
- Front and side protection
- Fits over spectacles
- Form-fitting frame
- Lightweight comfort

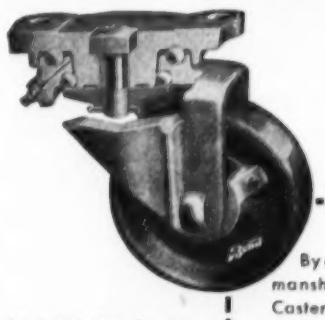
Write for Descriptive Bulletin

WILLSON®
Dependable Products Since 1870

WILLSON PRODUCTS, INC., 217 Washington St., Reading, Pa.

If you write maker identify as IEN - 1627

You cut handling time to the bone with Bond®
built-for-the-job CASTERS



136-A Series. Double Ball Race Swivel Caster equipped with roller bearing semi-steel wheels. Easy swiveling. Pressure lubricated. Wheel sizes from 4" to 12" dia.; load capacities from 600 to 1700 lbs. per caster.

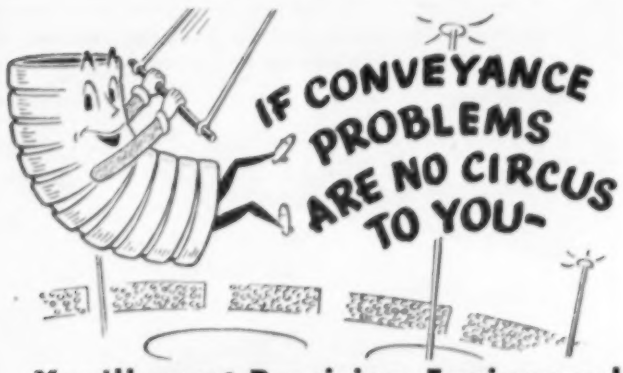
BOND FOUNDRY & MACHINE CO.
Manheim, Pennsylvania

By design, by materials, by workmanship, Bond Industrial Truck Casters are the key to *low cost-high profit* parts handling. These are the casters that ably meet *any service condition.* Loads can be sturdy or fragile, heavy or light. Hauls can be long or short. Aisles can be broad or narrow. Turns can be easy or sharp.

Remember—the *right* Bond Casters will *cut your materials handling time to the bone!*

Get the story straight . . . leading industrial distributors throughout the country will be glad to give you complete information or write for your copy of the Bond Catalog K-38.

If you write maker identify as IEN - 1628



..You'll want Precision-Engineered
UNIVERSAL METAL HOSE

There are many types and sizes of UMH . . . each engineered to a purpose. UMH gives you the most efficient, air-tight, fluid-tight conveyance possible for gases, liquids and bulk solids at elevated pressures and temperatures.

And because of advanced engineering design, UMH Flexible Metal Hose is tough, rugged and highly effective in resisting heat, pressure, corrosion and constant vibration.

Let us carry your load . . . tell us your troubles . . . you'll get a lot of help from our engineers, and the exact hose required from the specialized UMH Line AVAILABLE NOW.

UMH
Seamless Flexible Tubing

UMH
Interlocked High-Pressure Hose

UMH
Interlocked Exhaust and Blower Tubing

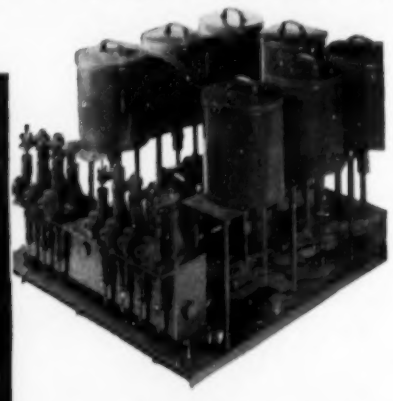
UMH
Square-Locked Low-Pressure Tubing

Remember . . . most UMH Metal Hose are still available. Send us your requirements and ask for Catalog U-101, for your handy reference file.

UNIVERSAL METAL HOSE CO.
2181 SOUTH KEDZIE AVE. CHICAGO 23, ILL.

If you write maker identify as IEN - 1629

Whatever YOUR Need in Chemical Feeders



● When you have a problem of feeding one liquid into another you can rely on Manzel's long experience in *precision* proportional pumping.

Manzel Chemical Feeders can be individually engineered for most applications.

MULTI-FEED CHEMICAL FEEDERS

Manzel flexibility permits *accurate* feeding of *many* different chemicals simultaneously. Chemicals can be pumped *into* other liquids or test samples drawn from production at regular intervals.

LARGE OR SMALL CAPACITIES

Manzels Chemical Feeders pump from a fraction of a drop to 60 gph per feed . . . with *unsurpassed accuracy and dependability.*

Ask Manzel
242 Babcock Street
Buffalo 10, N. Y.

SPECIALIZING IN HIGH PRESSURE METERING PUMPS SINCE 1898

If you write maker identify as IEN - 1630

Backstand belts cut costs!

Learn more about this money-saving method

The backstand-belt method of metal polishing is being used in more and more plants. Why? Because it saves time, cuts costs. Belts cut faster, cooler than set-up wheels – and cut down on the number of your operations. To learn more about this modern method of metal finishing, send for Armour's free booklet, "Backstand-Belt Polishing."

mail this coupon today

Please send booklet "Backstand-Belt Polishing."

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

ARMOUR Coated Abrasives

Armour and Company • North Benton Road • Alliance, Ohio

For Your Special Information

ALL MAKERS ARE LISTED — IEN S-2

This little piece is directed to you who have ordered the 1953 issue of Thomas' Register and expect to use it during the year to find sources for the things you need in your plants and products. You will benefit most if you will study the four volumes a bit before trying to put them to work. Pick a subject or two in each of the main alphabetical, by subject, books and check for sources in the listings so you will be acquainted with the way they are arranged. Look up some company names and trade names in the alphabetical, by company, book. Look through the index to see how it refers to subjects in individual and assembled listings.

We have seen many instances in which users of the Register have spent this preliminary study time to excellent advantage to understand the whole setup of the Register in which are listed all makers of all products in the United States. We hope you will let us know of any questions.

OUR YEAR END LETTER — IEN S-3

We are busy assembling the information you sent to us in answer to our year end letter. We just want to let you know that we are on the job at this time and to thank you sincerely for the many, many comments and suggestions you have made. We will report more fully when your replies stop coming in and we have completed our tabulation.

BLOOD — IEN S-4

Here and there, everywhere, are signs and posters telling of the present need for blood. Doubtless you have seen them. Possibly you have acted upon them and have given a pint or two. Some have given many pints. We are reminded of the little lady in a small business organization who saw the need and acted upon it. She made direct plea to each employee. She called the Red Cross and it sent a mobile unit. Between nine and twelve, in one morning, the Red Cross collected fifty pints. The interesting part of the whole thing was the feeling of well being for having done a personal bit of a very personal job for the boys in the fox holes.

U. S. SAVINGS BONDS — IEN S-5

It is not possible to estimate the tremendous influence that can be brought to bear when you speak favorably of the business of purchasing U. S. Savings Bonds and of participating in your company's Payroll Savings Plan. Try it out on any associate who may not be purchasing bonds and you will see what we mean.

Top Management:
YOUR BOOST
IS NEEDED MOST

If you write maker identify as IEN - 1631

TRY IT AND See... HOW EASY those heavy jigs, crates or barrels can be lifted, moved, stacked or stored... when BIG JOE does it!

The platforms or forks, loaded to 750 or 1000 pounds capacity, are easily raised and accurately stopped by the powerful hydraulic assembly at any level between floor and lifting heights of 54, 56, 68 or 80 inches. BIG JOES are always on the level with tailgate, shelf, machine or pallet for loading or unloading.

"Step-on-it" Manual Models from $236.50
Battery Powered Models from $587.50

Priced Right for Economical Materials Handling Anywhere

Write for Specifications

BIG JOE MANUFACTURING COMPANY
900-02 W. JACKSON BLVD.
CHICAGO 7, ILLINOIS

Let BIG JOE do it!

If you write maker identify as IEN - 1632

YOU BENEFIT 4 WAYS
Users of Curtis Universal Joints realize a fourfold benefit:

CURTIS UNIVERSAL JOINTS

1. 14 sizes — 3/8" to 4" O.D. in stock at all times for immediate shipment; bored or unbored hubs.
2. Curtis quality standards surpass the U.S.A.F. specifications and are used by every branch of the Armed Services.
3. Simple construction; fewer parts make assembly and disassembly easy, mean longer life.
4. Each part of specially selected steel, individually heat treated for a specific purpose — efficient service for a longer period of time.

Special Applications
Facilities and engineering skill for 6" diameter joints or other special specification jobs are immediately available.

Not sold through distributors: write direct for free engineering data and price list.

© CURTIS UNIVERSAL JOINTS
7 BIRNIE AVENUE • SPRINGFIELD, MASS.
As near to you as your telephone

A MANUFACTURER OF UNIVERSAL JOINTS SINCE 1919

If you write maker identify as IEN - 1633

TEMPERATURE RECORDING CONTROLLER

Recording mechanism also operates control switch.
Five Ranges of 150, 350, 450, 650 and 1000 deg. F.

PARTLOW
RECORDING-CONTROLLER
(Wall type illustrated)

Wall Type	$100
Flush Type	$115
RECORDER ONLY	
Wall Type	$73
Flush Type	$88

You install the sensitive bulb of this recording-controller at the location where you desire temperature control. Then you adjust the instrument to the desired control point. From there on operation is automatic, the switch actuating a solenoid or motor-operated valve, electric-heating unit, or driving motor without further attention. At the same time instrument traces a continuous record on its circular motor-driven or clock-driven chart.

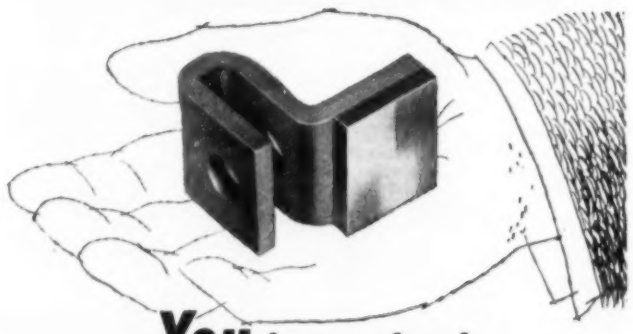
The switch connects direct to the power-operated equipment for loads within its capacity or operates through a relay for any larger load. It is available for operation normally "on," normally "off" or in single pole, double throw arrangement.

You can purchase the complete recorder-controller assembly for automatic control or we can omit the control switch to provide you with an instrument to record for manual control.

Recording-Controller details in Bulletin 901-A
Recorder details in Bulletin 900-A

THE PARTLOW CORPORATION
4 CAMPION ROAD NEW HARTFORD, N. Y.

If you write maker identify as IEN - 1634



You have a hand in Gibson Electrical Contacts

The experience of hundreds of product engineers — like yourself — is part of the development of Gibson electrical contacts. Study of their needs since 1933 has enabled Gibson Electric Company to produce the right contacts for many exacting applications.

Their confidence in Gibson stems from the success of Gibson engineers in solving the contact problems of original-equipment manufacturers. Let us apply our knowhow — embracing the *one Gibson aim* of developing the finest, most practical and economical contacts and assemblies — to *your* electrical contact problem.

Write for Gibson Catalog C-520. It contains technical information useful to you. But, to be of greatest usefulness, let us work with you to help in solving your contact problem. Send us details.

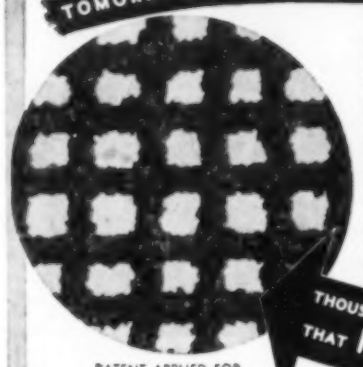
Contacts Engineered to Your Requirements

Gibsilay ELECTRICAL CONTACTS
Manufactured by GIBSON ELECTRIC COMPANY
8353 Frankstown Ave., Pittsburgh 21, Pa.

If you write maker identify as IEN - 1635

GRITCLOTH

TOMORROW'S SANDING FABRIC TODAY!



- USE WET OR DRY
- USE BOTH SIDES
- FLAT OR FOLDED
- By Machine or Hand
- NON-CLOGGING
- LONG LIFE

THOUSANDS OF SUPER-SHARP EDGES THAT KEEP ON CUTTING

PATENT APPLIED FOR

ANOTHER SPARKLING BAY STATE "FIRST"!

GRITCLOTH gives you MODERN SANDING . . . without the age-old problems of "clogging" and "loading". In GRITCLOTH'S open-mesh design, THE DUST FLOWS THROUGH THE HOLES, and the sharp abrasive teeth KEEP RIGHT ON CUTTING. Actual tests show 10 to 15 times the life of ordinary coated papers.

IT'S NEW IT'S BETTER IT'S BAY STATE

SEND FOR SAMPLE!

BAY STATE

BAY STATE ABRASIVE PRODUCTS CO.
Westboro, Massachusetts, U. S. A.
Branch Offices and Warehouses
Chicago, Cleveland, Detroit, Pittsburgh
Distributors — All principal cities
In Canada: Bay State Abrasive Products Co. (Canada) Ltd., Brantford, Ont.

If you write maker identify as IEN - 1636

What is more important in the manufacture of gears and gear assembly than PRECISION?

Amgears carries precision a step further . . . right into their production scheduling which assures delivery on time!

Amgears gives you skilled gear men, all types of gear-making machines, metallurgical laboratories . . . facilities so complete you have the equivalent of your own gear department, plus a Production Control Department that guarantees delivery on time.

So if you are held up by delays and excuses over delivery schedules . . . or if you want to get gear production right now, phone or wire an Amgears Engineer!

AMGEARS, INC.

Subsidiary of Hupp Corp.
6633 W. 65th St., Chicago 38, Ill. • POrtsmouth 7-2100
7450 Melville, Detroit 17, Mich. • Vinewood 3-9000

If you write maker identify as IEN - 1638

PRESS . . Self-contained hydraulic to force, straighten, 15 to 300 ton

Source: DAKE ENGINE CO.
614 Seventh St., Grand Haven, Mich.

Details in Bulletin 299

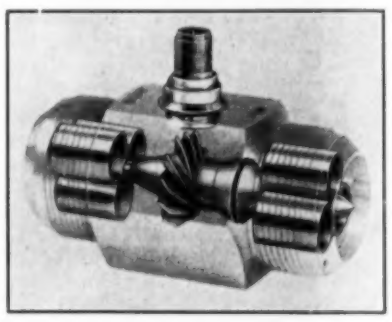
Series 25, with a bed designed for straightening operations, and Series 28, with a bed that includes a through hole for forcing, are each available in 11 sizes with capacity ranging from 15 to 300 ton and stroke length from 14 to 24 in. in this new line. Control is at a combination of foot pedal and hand lever with which the operator can apply desired pressure by increasing or decreasing his manual pressure.

The straightening design, shown in the illustration, provides a table length ranging from 36 to 84 in. and a 9 to 20-in. throat. Table length for the forcing assembly is 32 to 50 in. with throat at 9 to 20 in. and a 4 to 8-in. through hole. Each press includes its own motor driven hydraulic equipment rating 10 to 15 hp.

If you write maker identify as IEN - 1639

CONTROL . . Flow indicator and relay to signal and close a valve

Source: POTTER AERONAUTICAL CO.
60 Academy St., Newark 2, N. J.



Actuates a relay

Max-Alarm is a new combination of the company's electric sensing element, previously described IEN-10697-50 for installation in a pipe line, with a relay and suitable equipment to sound or show a signal and close a line valve. The equipment can be set to operate at a predetermined flow rate so this maximum limit cannot be exceeded. The relay is actuated by the sensing element consisting of a permanent-magnet vane driven generator that mounts in the flow line to produce an ac. output in its pick-up coil. Frequency is equal to rotor speed when the magnet is a two-pole assembly. It is twice this frequency with a four-pole design. The relay rates 8 amp. on 110-volt ac.

The sensing element, shown in the illustration, lists at $300 in an aluminum assembly for a ¾-in. line to handle a maximum flow of 20 gpm. The signaling and control equipment adds $400 to the element list price. Operating pressures and temperatures are not limiting factors.

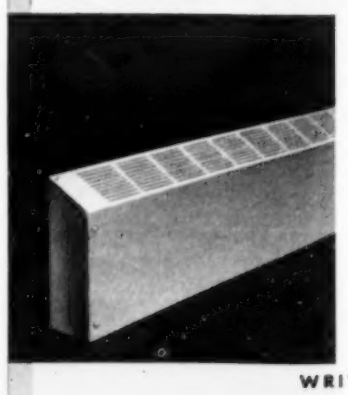
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1640

New

fedders

WALL RADIATION



✳ All steel construction for lifetime industrial, commercial and institutional requirements. Available with handsome flat or sloping top cabinets. Compact size, high heat transfer efficiency, easy installation, low cost.

WRITE FOR NEW CATALOG

FEDDERS-QUIGAN CORPORATION
57 TONAWANDA ST., Dept. IE-2 BUFFALO 7, N. Y.

If you write maker identify as IEN - 1641

TWO BIG EXTRAS you get in COFFING CHALLENGERS

EXTRA SAFETY You can depend on Coffing Challengers to fully protect men and equipment. All load-holding parts are designed to withstand five times rated capacity of the hoist. Each Challenger is factory tested at 100 percent overload.

LOW COST MAINTENANCE Heavy-duty construction keeps the Coffing Challenger on the job – assures long life. Formed steel housing withstands impact and shock loads as only steel can. And the Challenger may be completely disassembled in minutes with ordinary tools.

For more information on Challengers and other products listed below, write Dept. P2C1.

Sold by Distributors Everywhere

COFFING HOIST COMPANY
DANVILLE, ILLINOIS

Hoist-Alls • Mighty-Midget Pullers • Spur-Gear Hoists • Differential Chain Hoists • Load Binders • I-Beam Trolleys • Quik-Lift Electric Hoists

If you write maker identify as IEN - 1642

GET RID OF WIRES

and get foolproof connections in

- RADIOS
- AMPLIFIERS
- SWITCHBOARDS
- METERS

Print your circuits with Du Pont Conductive Coatings—reduce costs and time

Highly conductive coatings of low resistance are easily obtained by spray, brush, dip or stencil to metals and non-conductors. These coatings can be used to make economical, lightweight, compact high-voltage capacitors; static shields to replace usual cans and foils; resistors and solder seals. For more information, send for Bulletin CP 2-1248. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Del.

DU PONT ELECTROCHEMICALS

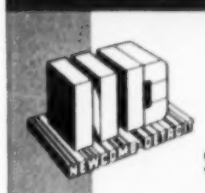
DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

If you write maker identify as IEN - 1643

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF



- INDUSTRIAL OVENS
- SPRAY BOOTHS
- PARTS WASHERS
- DUST COLLECTORS
- HEAT and AIR SYSTEMS

ESTABLISHED 1912
- DETROIT DIVISION
- GRAND RAPIDS DIVISION
- NEWCOMB INDUSTRIES, LTD., WINDSOR DIVISION

For Bulletins and Quotations, Wire, Write or Call—
NEWCOMB-DETROIT
5757 Russell St., Detroit 11, Mich.
TR 3-2100

If you write maker identify as IEN - 1644

NOW! AN EASIER, FASTER WAY
To Apply Sealing Compounds

New ALEMITE VERSATAL "TORNADO" PUMP

A PRODUCT OF SW SERVICE WORKS

- ★ Air operated! Dispenses material direct from original bulk drums.
- ★ Assures positive and uniform delivery through long lines with complete safety.
- ★ Lays hundreds of lineal feet per man hour with far less product spoilage.

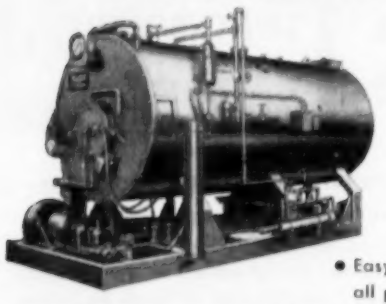
FREE! This book of ideas on how Alemite Versatal equipment can speed, simplify your material handling problems. Address your request to Alemite, Dept. K-23, 1850 Diversey Parkway, Chicago 14, Illinois.

ALEMITE *Versatal* SPRAY-PUMP EQUIPMENT

If you write maker identify as IEN - 1645

"Easy to install . . . Easy to operate . . . Easy on the fuel!"

AMESTEAM GENERATOR



- A complete unit, piped and wired, ready for service connections.
- Needs no special foundation or expensive stack.
- Fully automatic . . . attention-free.
- 80% efficiency means real fuel savings.
- Easy to clean and service . . . all parts accessible.

20 SIZES — 10 to 600 h.p. — 15 to 200# OIL OR GAS

FREE BULLETIN! WRITE FOR YOUR COPY

Complete engineering facts on the exact AMESTEAM GENERATOR to do your job and save you money. Write today!

AMES IRON WORKS

BOX F-23, OSWEGO, N. Y.

If you write maker identify as IEN - 1646

REDUCE FILTRATION TROUBLES!

Need a filter but worried about filtration costs, operation, or suitability for your purpose? Then get your Free Copy of the Titeflex® Filter Booklet right away.

Ask for a Titeflex Engineer to set you straight on costs and equipment for your special needs. No obligation. Mail coupon today.

FREE BOOKLET . . . **FREE ADVICE**

Businesses served by Titeflex Filters include . . .

Chemical • Distilling	Dry Cleaning
Electroplating	Paints & Lacquers
Soap • Cosmetics	Water
Pharmaceuticals	Food Processing
Wine • Beverages	Edible Oils
Machine Tool	Food Extracts

Titeflex

Let Our Family of Products Help Yours

MAIL COUPON TODAY

TITEFLEX, INC.
506 Frelinghuysen Ave., Newark 5, N. J.

☐ Please send me a copy of your Free Booklet about Titeflex Filters.

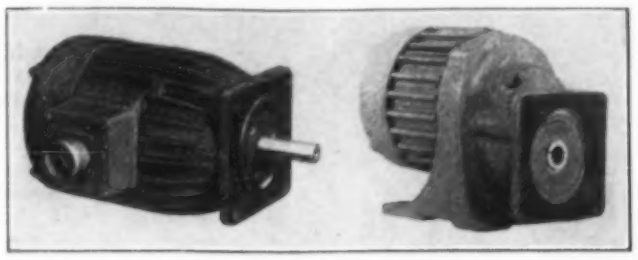
☐ We need the advice of a Titeflex Filtration Engineer . . . without obligation on our part.

NAME _____
TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

If you write maker identify as IEN - 1647

MOTORS . . Explosion proof in braked and geared head designs

Source: U. S. ELECTRICAL MOTORS INC.
Box 2058-A, Terminal Annex, Los Angeles 54, Calif.



Double enclosure, fan cooled

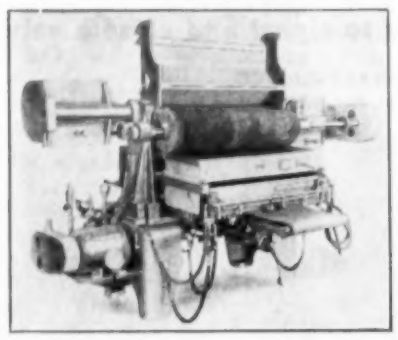
To the left in the illustration is a new 400-cycle three-phase ac. motor rating ⅓ hp. at 11,000 rpm. and ¼ hp. at 5,200 rpm. The motor employs two speed windings in its double enclosed assembly. The rotor is mounted on ball bearings. The built in brake is actuated on a dc. circuit.

To the right is a geared head assembly rating 1½ hp. on continuous duty for operation on 400 cycle three phase ac. The head employs hardened helical gears. Both motors are equipped with thermal overload protection and are suited for rapid acceleration at high starting torque.

If you write maker identify as IEN - 1648

POLISHING . . Roll type machine to finish the surfaces of hand tools

Source: CLAIR MFG. CO.
1004 S. Union St., Olean, N. Y.



Rough glaze to mirror finish

A magnetic chuck, or means for mechanical holding, can be employed with this new Model 206-A surface finishing machine for work such as wrenches, pliers, axe heads. The single roll type buff mounts on a spindle 40 in. in length. The buff ranges from 3 to 12 in. in diameter depending on the work.

Work space measures 38 in. in width by 24 in. from front to back with a mechanical holding fixture. It measures 38 by 14 in. when a magnetic chuck is employed. Drive is by a 15-hp. motor. The work table can be moved forward to clear the buff, on completion of the final pass, to bring the work out for unloading and reloading.

Identify as IEN - 1649

Standard Pressed Steel Company has published a pocket booklet presenting six maps listing and illustrating points of interest, entertainment and industry around its home in Jenkintown. Philadelphia and the New Jersey and Pennsylvania turnpikes are included. The booklet is called the "Visitors' to and from Guide." It is a standing invitation to come and see and get acquainted with the company and its products.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1650

OVERSPEED GOVERNORS

Synchro-Start Overspeed Governors are made for shut-down at any predetermined RPM by either opening or closing a circuit and speed can be adjusted while the engine is running.

Rotating parts of the GF's run in sealed ball bearings, lubricated for life and equipped with tachometer drive take-off.

Rotating parts of the GK's run in two oil-less bushings and are adapted to standard SAE coupling or gear drive.

All models can be mounted in any position and an angle drive attachment can be furnished for GKA and GKM.

For further information write for Bulletins 409 and 409-A

SYNCHRO-START PRODUCTS, INC.
8151 NORTH RIDGEWAY AVENUE, SKOKIE, ILLINOIS.

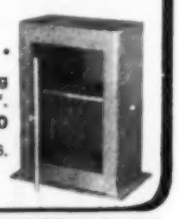
If you write maker identify as IEN - 1651

TOMLEE *Metal Cutting* BAND SAW

only $89.50
F.O.B. MINNEAPOLIS

NOW each bench can be equipped with a Tomlee to break your production bottleneck It's a low cost auxiliary to your heavy duty metal cutting machine, so often kept tied up with big work. The rugged, cast iron Tomlee will cut any metal that will run through its 5⅜" throat. Large work table easily tilts to 45° and is grooved to take a mitre gauge for compound angle cuts. Ball bearings throughout, operates at 4 speeds. Delivered complete with simple instructions, a set of guides and a ⅜" blade. *Write for bulletin.*

Accessories



Band Saw Stand. All-steel cabinet for mounting motor and storing accessories. 15"x23"x29¾". $37.50

No. 31500 Mitre Gauge. $5.00
No. 455 Rip Fence. $5.00
½ HP Motor. 110-230 V. $43.50

ALL PRICES F.O.B. MINNEAPOLIS

TOMLEE TOOL & ENGINEERING CO.
721 Washington Ave. N., Minneapolis 1, Minn.

If you write maker identify as IEN - 1652

Direction-Wise and Meter-Wise

The STERLING indicating meter used on Alliance Manufacturing Company's Model DIR ALLIANCE TENNA-ROTOR always shows the Right Direction to television set owners everywhere. (Over a million in successful operation)

STERLING engineers can show you the right direction, too, when your problem is with indicating meters. Years of production experience with a complete line of high quality meters for the automotive, electrical and radio fields enables STERLING to produce indicating meters to meet your exact requirements at lower cost.

It may even be a standard model voltmeter, ammeter or milliammeter, readily available, that will meet your requirements. Write for further details.

STERLING
MANUFACTURING COMPANY
7201 Wentworth Ave.
CLEVELAND, OHIO

If you write maker identify as IEN - 1654

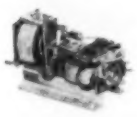
SOUNDLY ENGINEERED . . .

PRECISION-BUILT

Leach RELAYS . . .

not only meet, but surpass the most stringent requirements!

Always the goal at *Leach* has been to design and manufacture relays that achieve the maximum degree of performance.



Nearly four decades of leadership in providing a complete line of relays for a multitude of applications.

FOR BETTER CONTROLS THROUGH BETTER RELAYS
—Specify Leach

LEACH RELAY CO.

5915 AVALON BOULEVARD, LOS ANGELES 3, CALIFORNIA
Representatives in Principal Cities of U. S. and Canada

If you write maker identify as IEN - 1655

M·Z·B

PRECISION VERNIER CALIPERS
Accurate **Dependable**

6" size

A tool to comply with the most exacting demands. Made by the leading European precision tool craftsmen. Measures inside, outside, thread and depth.

The following models have the famous M•Z•B cam lock which guarantees fixed and never shifting setting when pressure on lock is released.

#30-61	Chrome Steel	.001" & 1/128"	$14.00
#30-64	Chrome Steel	.001" & 1/20 mm	$14.00
#30-62	Stainless Steel	.001" & 1/128"	$16.50
#30-65	Stainless Steel	.001" & 1/20 mm	$16.50
With set screw			
#30-78	Chrome Steel	.001" & 1/20 mm	$9.75

Total length of above models 8". Scale 6".

12" Calipers and Height Gauges also available.
Leather cases supplied free of charge with each caliper.

M·Z·B

MICROMETERS

M•Z•B Micrometers 1" size to read .0001" wth hardened threads, stop-nut and ratchet comparable to the best only $15.00. Made by the men who made precision tools famous with the "know-how" and experience that produced hundreds of thousands of the finest calipers and micrometers ever sold.

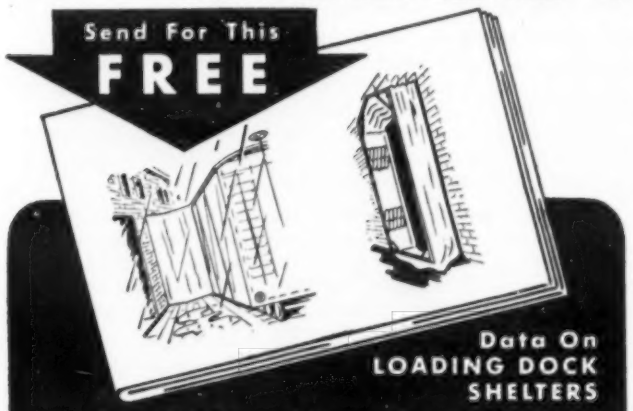
Send for our latest literature giving detailed information on these precision tools.

We also import fine precision pliers—send for information

INTER-CONTINENTAL TRADING CORP. 90 WEST STREET NEW YORK 6, N. Y.

If you write maker identify as IEN - 1656

Send For This
FREE



Data On
LOADING DOCK
SHELTERS

For Bad Weather Protection

See how to protect men and materials against cold and wet weather THE YEAR-'ROUND, keep dock board dry, speed loading, stop heat loss—at surprisingly low cost. Standard models, ruggedly constructed and precision engineered to fit your needs. All units adaptable to fit any size freight car or truck.

ATLAS PRODUCTS CO.
1302 W. Washington Blvd. Chicago 7, Ill.
MANUFACTURERS AND DESIGNERS FOR MORE THAN 40 YEARS

If you write maker identify as IEN - 1657

TRUCK . . Engine driven fork unit tilts to lift, manually or by power

Source: KALAMAZOO MFG. CO.
1825-29 Reed St., Kalamazoo, Mich.

Details in Bulletin XP-1

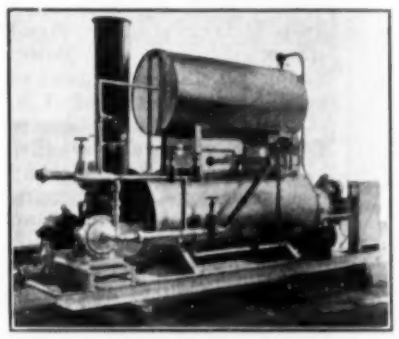
The forward end of this new truck resembles a standard two wheel unit in the manner in which it tilts forward to position its forks or shoe under a load and then tilts back to raise the load into carrying position. It is available for manual or hydraulic tilt, the latter driven by a Vickers power back operating double acting cylinders powered by the truck's engine. The engine is a Wisconsin 7½-hp. unit, an air cooled design with magneto ignition, a governor and an oil bath air cleaner. Load capacity is 800 lb., based on a 12-in. load center.

Control centers at a foot pedal which operates a forward and reverse multiple disc clutch transmission for speed to 9 mph. forward, 7 mph. in reverse. Wheel base measures 35 inches. Tread is 28 inches. The truck steers on its front wheels and will operate in 56-in. intersecting aisles. Turning radius is 68 inches. The front end can be equipped to handle boxes, bales, barrels. It can be fitted with a utility plate 32 in. in width carrying a fixed 10-in. shoe and a hinged shoe measuring 24 in. from front to back.

If you write maker identify as IEN - 1658

HEATING . . Oil or gas fired unit heats and circulates processing oil

Source: HOT OIL HEATER CO.
244-48 Walnut St., Room 7, Newtonville 60, Mass.



Bulletin presents details

Mineral oil for heat exchange use, as supplied by the major oil companies, is heated and circulated at atmospheric pressure by this new equipment. It provides a fluid heating medium for temperatures to 600 deg. F. The equipment is available in small units for individual process equipment and in sizes to 5,000,000 btu. per hour. It is shipped as a packaged unit. Larger sizes to 10,000,000 btu. per hour or more are built for erection on the job.

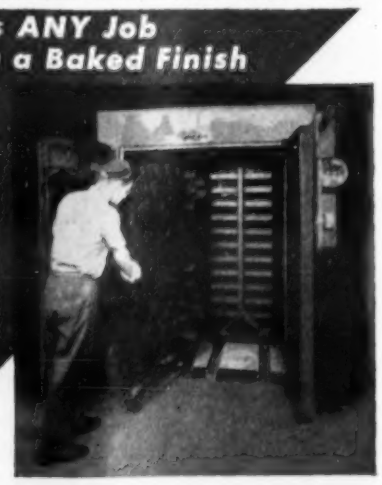
Heat is supplied by an oil or gas burner or a combination of the two. The equipment is designed so heat transfer is controlled to eliminate any danger of carbonizing the oil, whether it is flowing through the process lines or standing in the heating equipment. There is no need to drain in the event of a power failure or any other failure that stops circulation. Since the oil is carried at pressure sufficient only to circulate it there is no problem of leakage. Oil make-up required in service is negligible.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1659

Handles ANY Job Requiring a Baked Finish

Despatch
FINISH BAKING OVENS



Minneapolis-Honeywell Regulator Company operates a number of Despatch Ovens for various jobs. The operator running the above RS-4 Electric Finish Baking Oven, for baking finishes on relay cases, is particularly enthusiastic. He likes the accurate temperature control, ease of loading and avoidance of heat loss. He figures that the RS Oven, installed in 1946, paid for itself years ago through the saving in drying time. Does your operation require controlled, uniform heat up to 500°?

Write for the Despatch RS Bulletin.

DESPATCH OVEN CO. Established in 1902

Manufacturers of ovens for: Paint Finishing . . . Dehydrating . . . Curing . . . All Industrial and Laboratory Applications.

337 DESPATCH BLDG., MINNEAPOLIS 14, MINN.

If you write maker identify as IEN - 1660

Save Installation Time!

SPECIFY AN ALLIS-CHALMERS COMBINATION STARTER

When you need both a magnetic starter and the protection of a safety switch, a neat installation can be made quickly with an Allis-Chalmers circuit breaker type combination starter. Starter and switch are factory assembled and wired in a single enclosure to save you installation time and space.

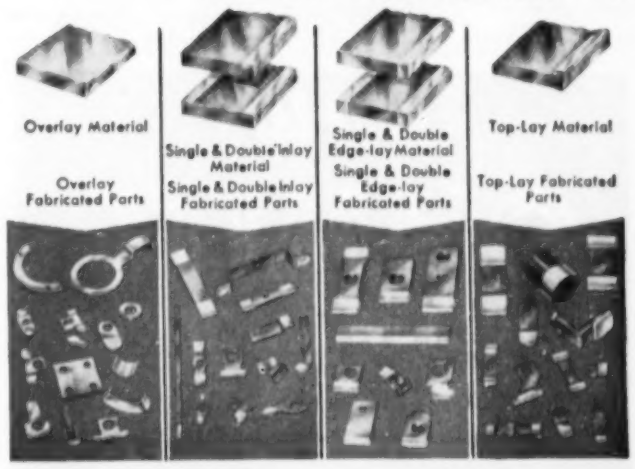
You get a starter that has long-lasting contacts, non-carbonizing arc chambers and easily accessible parts. The circuit breaker gives short circuit protection . . . serves as a disconnect switch.

Combination starters are available in sizes 0 through 5 for motors from fractional to 200 hp, 110-550 volts.

Remember, there is an Allis-Chalmers starter for every motor need. All are designed and constructed for long life, easy inspection, speedy installation. Bulletin 14B7132 describes manual, magnetic, combination, and reversing starters for 110-550 volt motors. Contact your nearby A-C representative, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3715

ALLIS-CHALMERS

If you write maker identify as IEN - 1661



GENERAL PLATE
Composite Contacts
give the Solution to Your Contact Problems

General Plate is a source of supply for precious and composite metal contacts, buttons, rivets, contact assemblies and contact materials.

General Plate produces overlay, inlay, edge-lay and Top-Lay contact materials. Composite contact materials make it possible to manufacture complete contact assemblies to close tolerances by simple blanking and forming operations.

General Plate's Contact Department is completely equipped to produce assemblies fabricated to your exact specifications. Contacts and/or assemblies are shipped to you ready for installation.

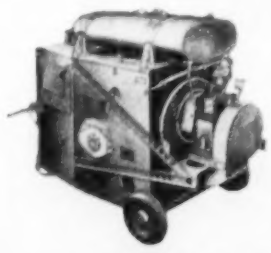
Write for complete information and Catalog PR700 today.

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
72 FOREST STREET, ATTLEBORO, MASS.

If you write maker identify as IEN - 1662

EMERGENCY HEAT
QUICK ··· SAFE ··· PORTABLE!

• You can avoid layoffs, speed work in cold areas, provide temporary heat for warehouses with Herman Nelson Portable Heaters. They also provide auxiliary heating for those extra cold days or during loading or unloading operations and for scores of other heating and drying jobs.



HERMAN NELSON STANDARD MODEL
Capacity 250,000-385,000 BTU/hr. Gasoline engine powered. Self-contained for areas lacking electricity. Other models available—electric powered — with capacities from 125,000 to 450,000 BTU/hr.

The only completely safe portable heater that uses flexible ducts to spot heat where most needed—and remember, only uncontaminated air heaters are absolutely safe!

Models as low as $360.00—total cost often saved during first season. For full information, write Dept. 106, Herman Nelson Division, American Air Filter Company, Inc., Moline, Illinois.

If you write maker identify as **IEN - 1663**

BETTCHER MANUFACTURING CORPORATION . . .

says PHILLIPS degreasing
★ speeds up production
★ cuts overall production costs
★ gives more efficient cleaning

Phillips Model 84 degreaser gives fast, efficient cleaning in the Bettcher plant

PHILLIPS VAPOR DEGREASERS

- Higher operating temperature, greater capacity.
- No rinse, blast or drying operations.
- Power consumption only 70% in full production.
- Sizes, types for every need.
- Accurate, economical, safe solvent control.

Bettcher Manufacturing Corporation of Cleveland, Ohio has found that Phillips degreasing is vitally important in keeping costs low. Two Phillips batch type degreasers plus Phillsolv (stabilized and inhibited) are used to give fast, efficient cleaning of conversion heater parts. As a result, cleaning costs have been reduced 50% by this modern Phillips method. Parts are cleaner too, making possible further savings in finishing.

This is how the Phillips system helps get more profitable production. No matter what your own cleaning needs are, there is a Phillips unit to fit. Check with Phillips today for metal cleaning that cuts costs and improves cleaning at the same time.

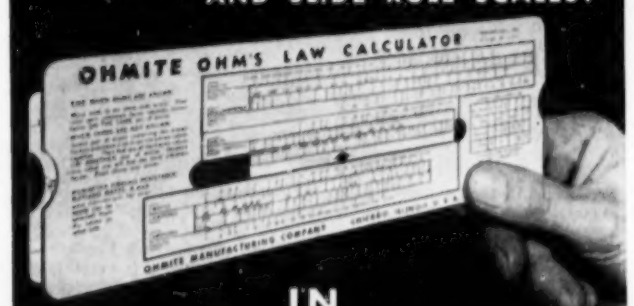
SEND FOR THIS CATALOG

Complete information kit. Details on sizes, styles, installation. Illustrated bulletin and vapor degreasing handbook.

Phillips 3461 Touhy Avenue • Chicago 45, Illinois
MANUFACTURING COMPANY
Engineered Metal Cleaning Equipment

If you write maker identify as **IEN - 1664**

NOW! OHMITE® OHM'S LAW CALCULATOR
WITH PARALLEL RESISTANCE AND SLIDE RULE SCALES!



IN DURABLE VINYLITE
$1.50

ONLY ONE SETTING REQUIRED to solve any Ohm's law and many parallel resistance problems—quickly, simply, accurately. Covers a range of values encountered in electronic and moderate power applications.

HANDY POCKET SIZE only 9" x 3", can be carried anywhere. Slide rule scales multiply, divide, find squares and square roots. Durable vinylite remains dimensionally stable.

ALSO AVAILABLE IN 25¢ VARNISHED CARDBOARD MODEL

Be Right with **OHMITE®**

MAKERS OF RHEOSTATS RESISTORS AND TAP SWITCHES

SEND FOR

Ohmite Mfg. Co.
4813 Flournoy St.
Chicago 44, Ill.

Please send my OHMITE calculator. I enclose check or money order for:
☐ VINYLITE @ $1.50
☐ CARDBOARD @ 25¢

Name_____
Address_____
City_____ State_____

If you write maker identify as **IEN - 1666**

WELDING . . Spot weld machine, electronic control, for small work

Source: UNITEK CORP.
273-77 N. Halstead Ave., Pasadena 8, Calif.

For precise work

Model 1012 is a new unit in the company's Unimatic spot welding machine. The electrodes have been removed from the housing in the unit, previously described IEN-12442-49, and are now carried in a separate head. This head measures 1 by 2 by 3 inches and connects to the control housing by a 4-ft. lead. Welding throat depth is 2¼ inches. Energy storage in the 8 by 10½ by 4½ in. control housing can be set between 0.2 and 20 watt seconds.

Welding pressure is adjustable. It establishes the point at which firing takes place to produce a weld that will be free from burning, heat distortion, discoloration or spatter. The equipment can be set to join two sheets of Type 302 stainless steel measuring 0.018 in. in sheet thickness. The machine will weld two 0.0008-in. diameter copper or Nichrome wires.

If you write maker identify as **IEN - 1667**

CLEANING . . Portable vacuum machine picks up wet or dry dirt and litter

Source: DOYLE VACUUM CLEANER CO.
223-2 Stevens St., S. W., Grand Rapids 7, Mich.

16 gallon tank

New size has been added to the company's portable vacuum cleaner, previously described IEN-11878-49. Drive is by a 1-hp. universal motor, direct connected to a suction blower rating 250 cfm. and capable of establishing a section of 67 in. of static water lift. Capacity is 1,065 gph. with water or oil.

The machine will pick up dirt, sludge, spilled lubricants, chips, nuts. On construction jobs it will clean up plaster, lath remnants, shavings, nails as well as loose dirt ahead of final finishing work. The blower draws in dirt-laden air to the interior of a centrifugal separating chamber on which the blower and its motor are removably mounted. Air and fine dust particles pass through the blower to enter an escape bag where the dust is retained and the air is returned to the room. Model 30 mounts an 8-gal. enclosed bag. Model 40 employs a 13-gal. exposed bag.

Identify as **IEN - 1668**

You can rough and finish ream and burnish, all in one pass, with the new Super Tool Company's long flute carbide reamer. It is ground undersize for the first half inch, then builds up to finish size followed by a section in which the lands are circular to burnish to a micro finish.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1669**

RIGHT AT THE SOURCE OF WASTE

For this 15 hp motor, power losses are corrected where it does the most good—*at the source*. A 4 kvar Sprague Power Factor Correction Capacitor across the terminals reduced reactive circuit current flow through transformers and wiring to a bare minimum . . . slashed power bills noticeably.

Sprague Unit-Cell Capacitors make it unnecessary to buy even one kvar more than you need. Write for the Sprague free guide of cost-saving suggestions, No. 50B.

SPRAGUE SPRAGUE ELECTRIC COMPANY
165 Marshall St., North Adams, Mass.
PIONEERS IN ELECTRIC AND ELECTRONIC DEVELOPMENT

If you write maker identify as **IEN - 1670**

AA-267

What's your ROLL problem?

IF you sell your products in rolls (like adhesive tape), or—if you use rolls in production (like printing or coating) then—**better rolls can build your profits** by reducing waste, by increasing production and by improving your products. Get the facts on Camachine roll slitters and rewinders, the **right** model for every material. Write today to

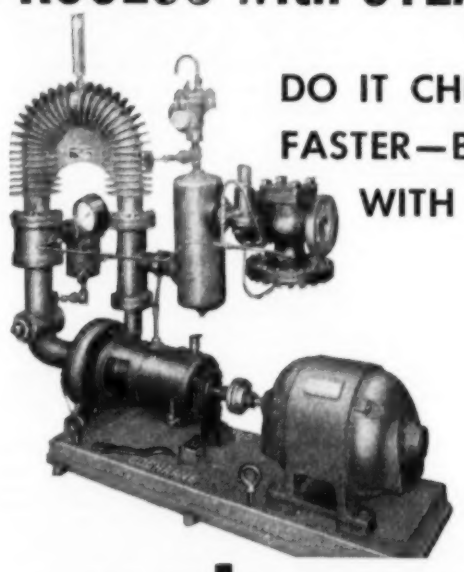
CAMERON MACHINE COMPANY
61 Poplar Street • Brooklyn 1, N. Y.

Camachine Commander High Speed Slitter Rewinder

Camachines

If you write maker identify as **IEN - 1671**

PROCESS with STEAM?



DO IT CHEAPER FASTER—BETTER WITH A

cochrane C-B

CONDENSATE DRAINAGE CONTROL SYSTEM

Save Money. Fuel costs may be reduced 10% or more because condensate is returned to boiler with no temperature or pressure drop. Make-up water costs are sharply reduced because there is no water loss through flashing. Boiler room maintenance costs are cut because entrained air and corrosive gases are separated from returned condensate.

Speed Production. Faster, more efficient heat transfer is assured; cooking and curing cycles are speeded; cold-starts eliminated; production can be increased as much as 35% because "insulating" layers of condensate are removed from all types of steam processing equipment, continuously and efficiently.

Improve Quality. Product quality is improved because heat fluctuations are leveled out; hot- and cold-spots are eliminated; processing time is reduced.

Write Today and discover how a Cochrane C-B High Pressure Condensate Drainage Control System can help you when used with:

Platen Presses	Vulcanizers	Tumblers
Jacketed Kettles	Tube Dryers	Coil Cookers
Dry Cans	Ironers	Drum Dryers
Expellers	Dry Plates	Spray Dryers
Drying Rolls	Unit Heaters	Presses
Dryers	Jacketed Mixers	Digesters

cochrane corporation
3152 N. 17th Street, Philadelphia 32, Pa.

If you write maker identify as **IEN - 1673**

NEW INDUSTRIAL HUMIDIFIER

BAHNSON TYPE E Self-Contained Unit Humidifier

Requires only water supply and electrical connection

NOTE THESE FEATURES!

- **HIGH CAPACITY**—Evaporates 3 gallons per hour with ¼ HP motor.
- **AUTOMATICALLY CONTROLLED** at any desired relative humidity.
- **SIMPLE TO INSTALL**—Just uncrate and suspend from ceiling.
- **ELECTRIC MOTORS** for all common current characteristics.
- **WATER SUPPLY** connection for ¼" tube or ⅛" pipe provided.
- **NEEDS NO** pump, duct, compressed air, steam, drain or floor space.
- **EFFICIENT** centrifugal atomization of ordinary city water.
- **TWO MODELS**, ¼ HP for high capacity, ⅛ HP for small rooms.

FOR COMPLETE HUMIDIFICATION SYSTEMS, FOR BOOSTING, FOR SPOT HUMIDIFICATION, FOR LABORATORIES

FOR TRULY DEPENDABLE LOW-COST HUMIDIFICATION — Bahnson Company, ENGINEERS AND MANUFACTURERS, WINSTON-SALEM, N. C.

If you write maker identify as **IEN - 1674**

CLING-SURFACE

MAKES BELTS
1. WORK BETTER
2. LAST LONGER
3. SAVE POWER

Cling-Surface adds "grip" to your transmission belts, stops slipping and permits trouble-free, economical, "slack belt" operation as shown above.

Tight belts stretch under constant tension and require frequent "take ups"; they increase the friction load, waste up to 50% of your power and needlessly strain your bearings and shafting.

Easy-to-apply, Cling-Surface is the ONLY belt preservative that meets U. S. Government requirements and is the ONLY brand that DARES to recommend "slack belt" operation. GIVE IT A TRIAL AT NO RISK. Any belt properly treated with Cling-Surface may be operated "slack". If you don't agree that this method practically eliminates down time for belt repairs, makes your belts, bearings and shafting last longer and delivers more power to your machines, we'll GIVE YOU BACK YOUR MONEY. We've been making this offer since 1896! Ask your mill supply man or,

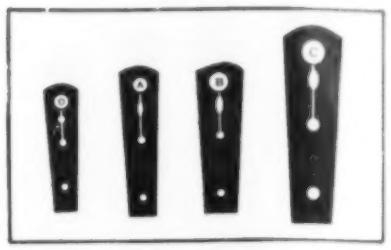
SEND FOR THIS FREE BOOK ▶
"The Truth about all Belt Dressings"

CLING-SURFACE CO. 1048 NIAGARA STREET BUFFALO 13, NEW YORK

If you write maker identify as **IEN - 1676**

DRIVE . . Link type V-belt assembles from stock as required

Source: BRAMMER CO.
684 Broadway, Dept. I, New York 12, N. Y.



76 cents to $2.15 per foot

Each rivet head in the company's link type V-belt, previously described IEN-7923-52, is stamped with the size symbol of the belt to assist a user in ordering and adding new links. At the same time the company is now prepared to supply the links in a new natural rubber compound featuring individual flexibility for the links and assisting in assembly. Links can be added or taken out by hand without need for tools. Four sizes of link are available as shown in the illustration.

If you write maker identify as **IEN - 1677**

CLEANING . . Volatile solvent for electric motors and equipment

Source: SHALER CO.
52 Shaler Ave., Waupun, Wis.

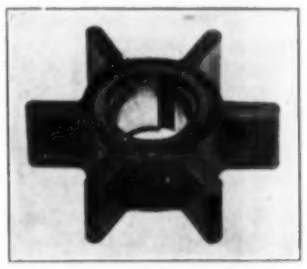
Dissolves grease
loosens dirt

A motor that requires cleaning is submerged in the company's new volatile cleaning solvent where it is run by connecting it into an electric circuit. After three or four minutes the motor is removed from the tank and dried out with a stream of compressed air. The solvent also can be sprayed into the intake side of a motor or generator while it is in operation. Motors that have been accidently submerged in water can be cleaned by immersion or spraying with the solvent without any subsequent heating operation. The solvent will not attack insulation that is resistant to oil or gasoline. Packaging is in 5 to 50-gal. drums equipped with faucets. List price ranges from $3.90 to $4 per gallon.

If you write maker identify as **IEN - 1678**

RUBBER . . Coating service bonds rubber to user's products

Source: ADVANCE RUBBER CO.
1700-704 Washington Ave., N., Minneapolis 11, Minn.



Typical item

Natural, synthetic or silicone rubber can be bonded in specified thickness to metal parts supplied by the user in a new service the company has set up at its home plant. Work parts can be sent in to be coated or they also can be specified for manufacture on a contract basis. The company is prepared to operate the bonding operation on work areas from $\frac{1}{16}$ to 12 in. and on work measuring to 10 by 10 inches. Metal valves can be covered with rubber. Metal inserts can be set inside the rubber parts to reinforce the normally resilient material.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1679**

Why Shipping Labels?

PRINT DIRECT

Speeds Up Freight Marking

Eliminate the cost and time of pasting on labels. Print direct . . 1000 or more clear, sharp copies without re-inking. Prints practically anywhere . . postcards, tags, labels, boxes, cartons, packages, menus, forms, letters . . paper, cloth, wood. Just type, write, trace or draw on inexpensive stencil . . snap it on duplicator . . and print—like using a rubberstamp. New pre-die-cut "FORM-CUT" stencil prints shipping form and identification data in one operation.

THE ORIGINAL HAND STAMP STENCIL DUPLICATOR

Portable . . non-mechanical . . of non corrosive metal . . replaceable ink pads. 8 complete outfits: $9.50 to $99.50, including supplies (f.o.b. factory). Write for literature or see your office or shipping room supply dealer.

OVER 30 YEARS — MULTISTAMP STENCIL DUPLICATOR

If you write maker identify as **IEN - 1680**

WHY YOU NEED GOOD VOLTAGE

Equipment	10% Undervoltage	10% Overvoltage
Incandescent lamp bulbs	Cuts light output 30% —slows production	Cuts life 70%— triples costs
A-C motors	Overheat—ups maintenance costs	Lowers power factor —ups power costs
Resistance heaters	Cuts heat output 19% —slows production	Overheats—ups replacement costs
Electronic devices	Probably destroy gas-filled tubes	Only 5% over cuts tube life 50%
Infrared processes	Ups process time —slows production	Blisters, scorches— ups production cost

You can get good voltage and eliminate the harmful effects of undervoltage and overvoltage by installing G-E Inductrols. These dry-type regulators ***automatically*** maintain correct voltage and assure peak operating efficiency.

Standard automatic regulators range from 3 kva, 120 volts to 500 kva, 600 volts. For more information, see your local G-E sales representative. Or write for bulletins GEA-5824, GEC-795 and GET-2351. *General Electric Company, Schenectady, New York.* 423-200

GENERAL ELECTRIC

If you write maker identify as **IEN - 1681**

Direct-casting Electric Furnace for better, faster precision investment casting

Melting position — *Casting position*

The new, type IC, 12 kw., 10-lb. Detroit Electric Furnace melts and pours heats of chrome-nickel, Stellite or superalloy steels in 9-12 minutes. Casting is done by inverting the furnace, pouring directly into the investment mold which is held in place by air pressure. Melting by fast, controlled, indirect arc minimizes carbon pickup and alloy variation. Simple, efficient operation is ideal for high production of precision castings.

Write for complete information.

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: In BRAZIL—Equipamentos Industrias, "Eisa" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castellvi Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Cia Proveedora de Industrias, Atenas 32-13, Apartado 27A3, Mexico 6, D. F., Mexico; EUROPE, ENGLAND: Birlec, Ltd., Birmingham.

If you write maker identify as **IEN - 1682**

Short Cut

TO FASTER FREIGHT HANDLING

Move materials faster from dock to dock over a cross-over bridge. Easy to operate, saves time and manpower. For single or multiple tracks . . . specify a Whiting design to help you get the most in handling efficiency. Ask for illustrated bulletin MS-C-400 today.

WHITING CORPORATION
15629 Lathrop Avenue, Harvey, Illinois

WHITING CROSS-OVER Bridges

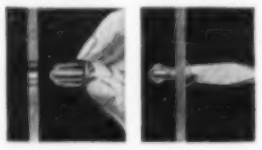
3 TYPES
OVERHEAD-RISE (as pictured)
GROUND-LEVEL
ROLL-AWAY

If you write maker identify as IEN - 1683

Have you a similar use for this 1-piece fastener?

It's a Cabinet Door Strike...Simple to install; eliminates welding and cuts assembly cost. Any head can be designed without affecting fastening principle.

It's a Shelf Support...For ranges or refrigerators—in plastic and metal. Leading appliance makers have achieved substantial installation savings through it.



It's a Blind Rivet...Or a removable fastener. It locks and unlocks with a 90° clockwise rotation. No mating parts such as nuts or receptacles.

It's a Lifter Knob or Dashboard Plug...Plastic Spring-Lock heads are molded around steel inserts, giving strength at point of load or impact. Any shape head can be molded in any color.

What's Your Application?

...Tell us how you can use Spring-Lock Fasteners in your products. We'll be glad to work out the details with you.

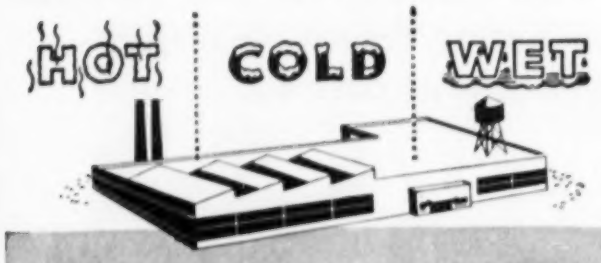
Send for more data and *Free Samples* today.

Simmons Fasteners

QUICK-LOCK • SPRING-LOCK
ROTO-LOCK

SIMMONS FASTENER CORP., 1758 North Broadway, Albany 1, N. Y.

If you write maker identify as IEN - 1684



HOUGHTON
COSMOLUBE
multi-purpose grease

Industry's best grease buy!

Why? Because it adheres to metal and resists oxidation. Because it's a heavy duty grease which works well in hot or cold locations. Because it also resists moisture. Get latest "Cosmolube" bulletin from E. F. HOUGHTON & CO., 303 W. Lehigh Ave., Philadelphia 33, Pa.

E. F. HOUGHTON & CO. PHILADELPHIA 33, PA.

If you write maker identify as IEN - 1685

Powermaster®
PACKAGED AUTOMATIC BOILERS
with
VORIFLOW® **Combustion**
Save Fuel and Man Hours!

For light oil, heavy oil, gas and gas/oil firing. Steam generating units from 15 to 500 HP.—15 to 250 p.s.i. Hot water boiler units 30 p.s.i. Reduce operating costs as much as 40% — save man-hours — get clean, dependable heat and hot water. A.S.M.E. Code construction.

Write For Bulletin

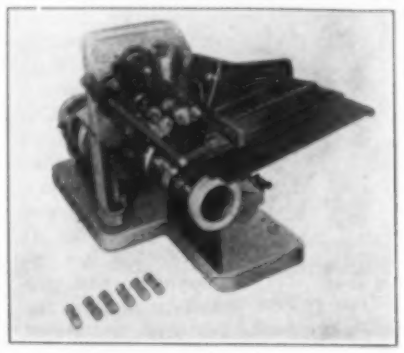
ORR & SEMBOWER, INC.
860 Morgantown Rd., Reading, Pa.

BUILDERS OF DEPENDABLE BOILERS SINCE 1885

If you write maker identify as IEN - 1686

MARKING . . Rotary machine prints information on cartridge fuses

Source: MARKEM MACHINE CO.
148-52 Congress St., Keene, N. H.



Prints brilliant colors

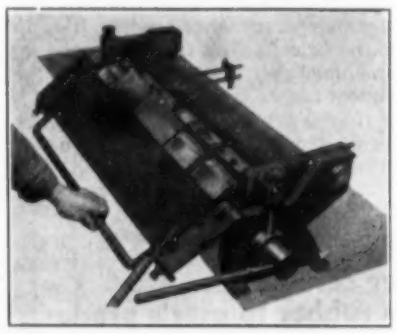
Model 51A is a new rotary printing machine designed to print directly on the bodies of cartridge fuses so separate labels are not required. The assembled fuse can be printed or the body only can be fed through the machine. It can be changed over quickly from one size fuse to another. The rubber printing plates can be changed to suit variables in the legend being printed.

Drive is by a ¼-hp. 60-cycle single-phase motor for an operating speed at the printing cylinder of 45 to 85 rpm. Overall size of the machine is 20 by 24 by 28 inches. Maximum area of the imprint is 1¾ by 6 inches. Maximum diameter of the fuse is 2½ in. with length to 7⅛ inches.

If you write maker identify as IEN - 1687

BENDING . . Hand operated machine takes 18 gage steel to 24 in. in width

Source: DREIS & KRUMP MFG. CO.
7416 S. Loomis Blvd., Chicago 36, Ill.



Cam clamp holds the work

Flanged boxes can be formed from flat stock in this new Size BB-2 universal box-and-pan bending brake. Width ranges from ¾ to 24 in. in ¼-in. steps. Maximum depth is 3 inches. Sharp bends can be made to a 1-in. radius with a reinforcing bar on the bending leaf. This leaf is mounted on needle bearings and is adjustable to control the angle of bend to a maximum of 135 degrees. Minimum reverse bend is ¼ inch. Clearance through the top opening is 1 inch.

The machine is fitted with a back gage that is adjustable from ⅛ to 18 inches. It mounts on a bench, weighs 240 pounds.

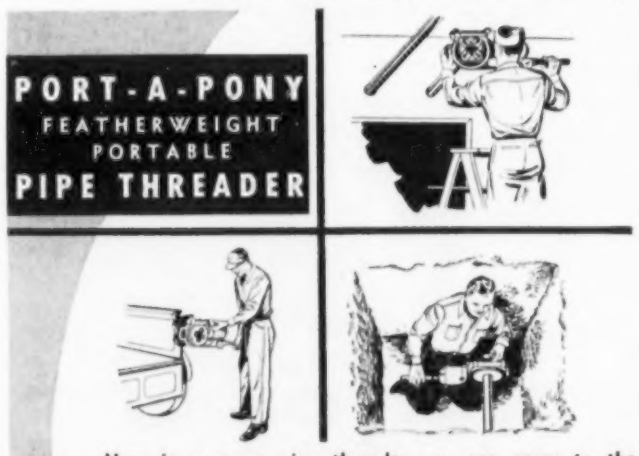
Identify as IEN - 1688

Accurate records can be kept on multiple bulk oil handling, as in a truck loading installation by application of the Rotocycle meters, made by Rockwell Manufacturing Company. The meters are equipped with electrically operated registers synchronized with electric ticket printing office registers at a central remote location. Each office register is permanently interlocked to one meter register. Current input is 60-cycle, 110-volt ac. Bulletin OG-324 explains the equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1689

PORT-A-PONY
FEATHERWEIGHT
PORTABLE
PIPE THREADER



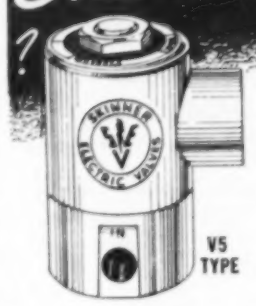
Here is a power pipe threader you can carry to the job in one hand. Weighing only 26 lbs., Port-A-Pony offers efficient pipe and conduit threading on all installation and maintenance work. You'll like the way Port-A-Pony threads any ¼" to 4" pipe on the job. The ½ hp reversible motor operates on 110V, AC or DC. Use your present die stocks.

Write for full information today.

THREAD-EZY MFG. CO.
333 N. SHIAWASSEE ST.
CORUNNA 2,
MICHIGAN

If you write maker identify as IEN - 1690

Solenoid Valve Problem?



A Standard Skinner may fill the bill!

Standard V5 Skinner stainless steel solenoid valves, either 2 or 3 way, are available with dozens of options to meet special needs for control of liquid or gaseous media. Such options include *by-pass, metering, manual override, various electrical connections and port locations, manual reset, etc.* Standard valves from 5 to 250 p.s.i.—specials from 5 to 1500 p.s.i. Power consumption, 10 watts max. Soft insert seats prevent leakage, and spring loading assures positive action. Large capacity, yet only 2¾" high x 1⅝" dia. Send your standard or special requirements to Skinner—write for Bulletin 501 for complete details.

Skinner **ELECTRIC VALVE DIV.**
THE SKINNER CHUCK COMPANY
110 Edgewood Ave., New Britain, Conn.

If you write maker identify as IEN - 1691

100 or 100,000?

You can always afford an
ANCO NAMEPLATE

You don't have to be BIG to give your product distinctive identification with an Anco nameplate. Small orders or large, Anco quality and craftsmanship never vary. Your exact specifications are met at a cost within your budget. Let's talk nameplates, whether you need 100 or 100,000.

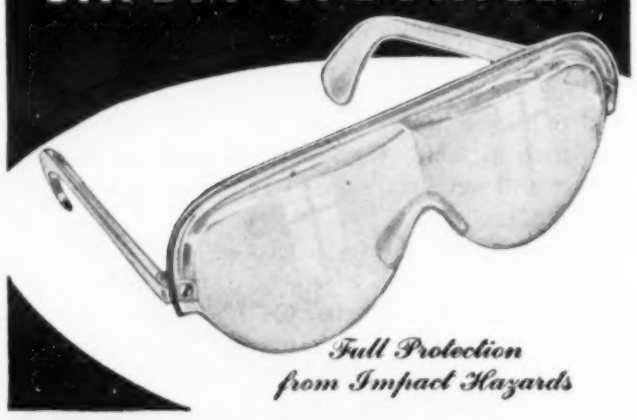
Write for your Anco catalog today.

CRESTAR
ANCO

AMERICAN NAMEPLATE and MFG. CO.
4246 W. Arthington St., Chicago 24, Ill.

If you write maker identify as IEN - 1692

the *New* SAF-I-SPEC SAFETY SPECTACLE



Full Protection from Impact Hazards

- Smart Appearance
- Replaceable Lens
- Genuine Comfort
- Rugged—Tough
- Optically Correct
- Low Cost
- Made of Optilite

Write for literature and prices

UNITED STATES SAFETY SERVICE CO.
KANSAS CITY 6, MISSOURI · BRANCHES IN PRINCIPAL INDUSTRIAL CITIES
In Canada PARMELEE, LTD. Toronto — Montreal

If you write maker identify as **IEN - 1693**

HARDINGE
ELMIRA, N.Y.

COLLETS and FEED FINGERS
PERFORMANCE . . . ECONOMY

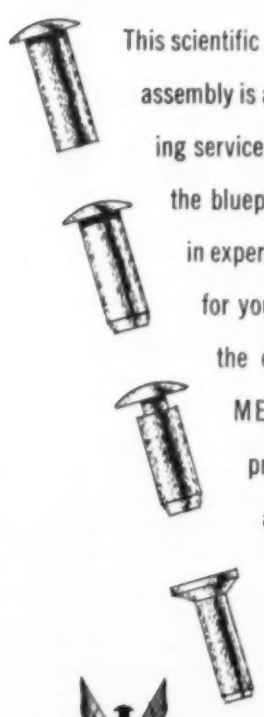
Collets and Feed Fingers for all makes of Automatics, Chucking Machines and Turret Lathes through a **single** source of supply. Get the benefit of more than 60 years of manufacturing experience—specify HARDINGE Collets and Feed Fingers.

HARDINGE BROTHERS, INC., ELMIRA, N. Y.

If you write maker identify as **IEN - 1694**

...when the **M**ilford **M**ethod may save you thousands of dollars in costly fasteners and assembly!

ask about the Milford Method



This scientific approach to product and parts assembly is a fastener-engineering consulting service which analyzes your needs at the blueprint stage...before you invest in expensive tools and dies! It projects for you the right fastener. Look into the economies of the "MILFORD METHOD" now. Send your blueprints and samples for analysis and planning by the "MILFORD METHOD", or write for the "Milford Method" brochure today.

the **MILFORD** EST. 1919
RIVET & MACHINE CO.

MILFORD . . . *the name to rivet in your memory for fasteners*

927 Bridgeport Ave., Milford, Conn.
876 Illinois Ave., Aurora, Ill.
1156 W. River St., Elyria, Ohio
76 Platt Street, Hatboro, Penn.
751 So. Palm Ave., Alhambra, Calif.

If you write maker identify as **IEN - 1696**

TRANSFORMER . . Variable design rates 4 amp., 7 to 13 volt ac. output

Source: PACIFIC TRANSDUCER CO.
11919-23 W. Pico Blvd., Los Angeles 64, Calif.

About $16

Model 226 is a new variable voltage transformer for operation on 110-volt ac. with input at 50 watts. The secondary is continuously variable between 7 and 13 volts ac. The transformer will operate low voltage lamps, small motors, heater elements, ac. relays, solenoids. Weight is 3 pounds. Dimensions are 3½ by 4 by 3½ inches. A 6-ft. cord and plug are standard equipment.

If you write maker identify as **IEN - 1697**

PAINTING . . Neoprene base liquid for concrete, structural steel, wood

Source: CONNECTICUT COATINGS INC.
43-47 E. Putnam Ave., Greenwich, Conn.

Three colors
black, red, gray

Series 700 is a new formulation of the company's Neoprene air curing liquid for protective application on steel structures, tanks, equipment and on concrete and wood exterior surfaces. Application is by brush or spray. The liquid will not set up in the containers. It will cure at normal temperatures after the solvent has evaporated. Content is about 40 per cent of solvents dispersed in aromatic solvents. Coverage is about 550 sq. ft. per gal. per mil of thickness. The body, as supplied, is sufficiently heavy to spray a 10 mil coat with good build-up on corners and sharp edges. Complete air curing takes place in two to seven days.

The film is resistant to attack by oil, grease and chemicals, to age crackling by sunlight, weather or ozone. It is resilient, abrasion resistant and it will not chip or crack. Heat resistance is to 200 deg. F. in steady duty or to 300 deg. F. for short intervals of intermittent service.

If you write maker identify as **IEN - 1698**

CLAMP . . Plier type toggle design, 3⅝ inch throat, locks to the work

Source: DAVID LEVOW
306 W. 20th St., New York 11, N. Y.

Single unit $3.55

Fitrite is a new toggle clamp with a spring backed locking mechanism that can be adjusted for width of grip by turning a knurled screw head at the rear end of one handle. When the other handle is closed down the over-center toggle will grip and hold the work. The clamp is suited for sheet metal working and to secure assemblies for riveting, drilling, welding. Jaw width is 3½ inches. Overall length is 9½ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1699**

FREE...

FOR... DESIGNERS
METHODS ENGINEERS
PROCESS ENGINEERS
PRODUCT ENGINEERS
MECHANICAL ENGINEERS
RESEARCH ENGINEERS
SUPERINTENDENTS
PURCHASING AGENTS

SEND FOR THESE HELPFUL BULLETINS TODAY

SERVICES BULLETIN NO. 161 describes the facilities that make Federal a *one-stop* stamping service. Specifications cover special die stamped wrenches, nameplates, and quality short run stampings from any stampable material.

COSTS BULLETIN NO. 101 shows how Federal's special dies give the accuracy, exact duplication, and tolerances of permanent dies *plus* saving as much as 80% on die costs.

Federal TOOL AND MANUFACTURING CO.
3618 ALABAMA AVE. (ST. LOUIS PARK)
MINNEAPOLIS, MINNESOTA
"QUALITY STAMPINGS IN SMALL QUANTITIES"

If you write maker identify as **IEN - 1700**

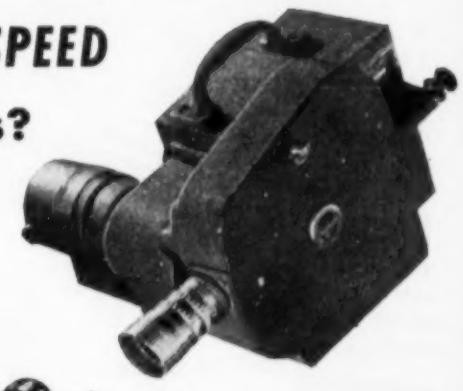
M&M air fluff paper shredder

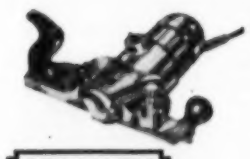
The Air-Fluff Paper Shredder is used for the commercial manufacture of paper excelsior. Also speedily, safely and efficiently destroys blueprints, letters and confidential records. Built in 3 sizes ranging in capacity from 200 to 2500 pounds per hour. Each machine can be adjusted to cut widths of 1/8", 3/16", 1/4", or 3/8". Write for descriptive literature.

mitts & merrill
1014 South Water • SAGINAW, MICHIGAN

If you write maker identify as **IEN - 1701**

Have *YOU* considered *HIGH SPEED* movies?





STANLEY
. . . vastly improved its electric plane with the Kodak High Speed Camera.

ROYAL
. . . saved valuable development time with it.

BALDWIN
. . . improved engine performance with it.

LOCKHEED
. . . shoots trouble with it.

High speed movies constitute a powerful weapon for engineers on tough design assignments or trouble-shooting expeditions. Quite a few types of extremely ingenious cameras for this purpose have been built, and they do remarkable things.*

For all-around industrial use, the most practical of them is the Kodak High Speed Camera. At least, so it would appear from the experiences of leading American manufacturers in developing their outstanding products. The camera is simple to operate, produces very sharp pictures, and runs in the right speed range for most industrial applications (1000 to 3200 frames per second). It uses standard 16mm film, black-and-white or Kodachrome, and when you project it with a standard projector you see the action slowed down as much as 200 times.

If you need to see what's really happening in an operation too fast for the eye, write us about it. Our photographic engineers will advise you whether the Kodak High Speed Camera should be able to show it to you. Once you add this instrument to your engineering department, it goes on solving engineering problems from then on.

Full information and literature from Eastman Kodak Company, Industrial Photographic Division, Rochester 4, N. Y.

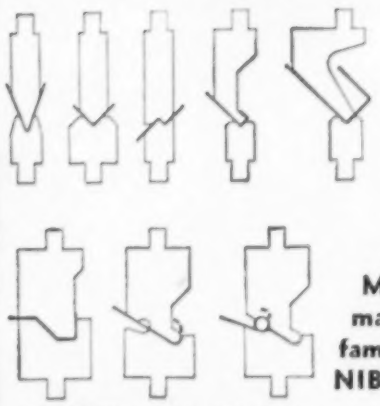
*We can send you a free reprint of an article entitled "High Speed Photography in Design" which will help you orient yourself in this field.

the Kodak *HIGH SPEED* Camera

Kodak
TRADE-MARK

If you write maker identify as **IEN - 1703**

BRAKE DIES



Made from **FORGED CHISEL STEEL BILLETS**

Made by the makers of the famous SEMCO NIBBLER PRESS

- MANY STILL IN USE EVEN AFTER 10, 20 AND EVEN 30 YEARS.
- THEY COST MORE BUT THEY LAST FOR YEARS.

Write for estimates on your work and ask for latest literature.

SEMCO
SERVICE MACHINE COMPANY
INCORPORATED
200 MILLER STREET ELIZABETH, N. J.

If you write maker identify as **IEN - 1704**

STOP COSTLY WATER HAMMER NOW!

WILLIAMS-HAGER FLANGED *Silent* CHECK VALVES

WILLIAMS-HAGER Flanged Silent Check Valves are the economical and dependable answer to troublesome and costly "water hammer" in all pump lines. These valves operate effectively in horizontal, vertical, upside down or angular positions—under any service or pressure condition.

WRITE FOR BULLETIN WH-851

This bulletin gives complete details on the cause, effect and control of damaging "Water Hammer." Use the coupon below for prompt delivery of your copy.

CHECK VALVES

THE WILLIAMS GAUGE CO.
2900 Pennsylvania Ave. Pittsburgh 33, Pa.

If you write maker identify as **IEN - 1705**

SPRAY NOZZLES

...FOR LOWER COST

CLIP AND MAIL

Spray Nozzles alone can often materially reduce spraying costs. Spraying Systems Co. has proved this again and again. Write for Catalogs 22 and 23 . . . and see for yourself.

SPRAYING SYSTEMS CO.
3208 Randolph Street • Bellwood, Illinois

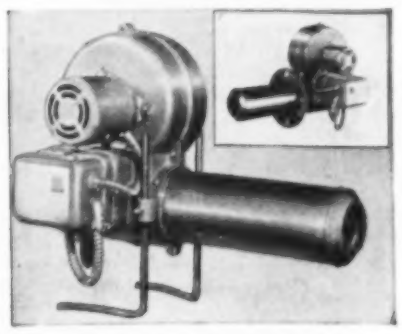
☐ Send me Catalog No. 22 ☐ Send me Catalog No. 23

Name_____
Company Name_____
Address_____
City_____ State_____

If you write maker identify as **IEN - 1706**

HEATING . . Gas burner to deliver a short swirling flame

Source: SYNCHRONOUS FLAME INC.
325-29 S. LaSalle St., Chicago 4, Ill.



Meets AGA specifications

Three sizes of this new Syncro-Flame burner rate 75,000 to 500,000 btu. They are available with leg or flange mounting to fit in the vestibules of most gas and oil burning furnaces. Operation is independent of chimney draft, a motor driven blower supplying air for combustion.

A mercury switch actuated by the blower air pressure provides sufficient air before the main gas valve can open. The pilot is ignited electrically by push button control. Both pilot and main valve have an automatic safety shut-off in the event of flame failure. The air inlet shutter prevents complete air shut-off. A solenoid controls on and off operation. The housing is made of cast aluminum with a steel draft tube. The fan is accessible for cleaning and the inner assembly is removable as a unit to assist in servicing when required.

If you write maker identify as **IEN - 1707**

BROACHING . . Push type cutter for 1/16 to 1 inch keyway machining

Source: DU MONT CORP.
du Mont St., Greenfield, Mass.

In single units or sets

New tooth form has been developed by the company in which a radius back of each tooth crest blends into a large radius to promote chip flow as shown in the illustration. The new form provides maximum chip room, assures free chip curling, prevents clogging. It also minimizes the pressure required to push the broach through a work piece.

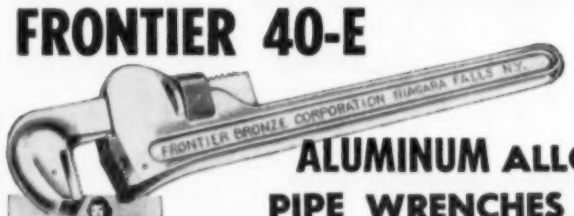
Identify as **IEN - 1708**

Publicity Advertising Company announces publication of its Directory for 1953, previously described IEN-6567-52, to present the names of some 2,000 magazines and papers with their editorial setups. Individuals are listed who should receive releases. Type of material suitable in each case is outlined. Three volumes cover consumer, farm and business-trade.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1709**

Check the Features that make FRONTIER 40-E



ALUMINUM ALLOY PIPE WRENCHES . . .

Perfect for PIPE FITTING

Feather Weight

Rugged Strength

- ✓ HALF THE WEIGHT of ordinary wrenches for easier handling and effortless work.
- ✓ EXTRA STRENGTH to meet rough usage through use of rugged Frontier 40-E Aluminum Alloy.
- ✓ JAWS THAT WON'T LET GO because of sturdy steel teeth. Replaceable steel inserts for jaws simplify wrench maintenance.
- ✓ GUARANTEED AGAINST BREAKAGE in normal use. Sizes range from 14" to 48" to fit specific jobs.
- ✓ TAKES HEAVY PRESSURE. Man in lower illustration weighs 215 pounds, is exerting full pressure 40" from wrench jaw! Sizes 14", 18", 24" and 36".

Use the wrench that's expressly designed for pipefitting problems. Insist on FRONTIER Aluminum Pipe Wrenches.
Ask your jobber, or write today to:

FRONTIER BRONZE CORPORATION
4887 Packard Road, Niagara Falls, N. Y.

If you write maker identify as **IEN - 1710**

Over 17,000 copies now in use!

THE RELAY DATA YOU NEED . . .

at your Fingertips!

This famous 640-page Struthers-Dunn RELAY ENGINEERING HANDBOOK answers your questions about relays—explains fundamental types—tells what types to use for specific applications—serves as a comprehensive guide to relay circuits, relay selection, application, use and maintenance. Contains over 1100 illustrations. Limp bound in convenient pocket size. Price $3 per copy.

STRUTHERS-DUNN

5,348 RELAY TYPES

• POWER • SPECIAL-PURPOSE • SMALL •
• SEQUENCE • LATCH • SENSITIVE •
• TIMERS • INSTRUMENT-CONTROLLED •

Struthers-Dunn, Inc., 150 N. 13th St., Philadelphia 7, Pa.
BALTIMORE • BOSTON • BUFFALO • CHARLOTTE • CHICAGO • CINCINNATI
CLEVELAND • DALLAS • DETROIT • KANSAS CITY • LOS ANGELES
MINNEAPOLIS • MONTREAL • NEW ORLEANS • NEW YORK • PITTSBURGH
ST. LOUIS • SAN FRANCISCO • SEATTLE • SYRACUSE • TORONTO

If you write maker identify as **IEN - 1711**

FASTER... *uniform heating*

forced draft electric utility

OVENS

Motor Blower Air Movement . . . provides constantly reheated air in every square inch of working space. Air flow bands are provided to reduce air movement when light powdery materials are processed. The Modella heating element covers the entire base of the oven. Baking, drying or preheating procedures can be done quickly and with assurance that each unit will be equally treated.

Power Selector Heat Control . . . the Power Selector Switch adjusts the wattage input, and in conjunction with the sensitive hydraulic thermostat, accurately controls temperatures. The results are stable temperatures at any level and elimination of costly power waste at low temperatures.

Insulation and Construction . . . three inches of Fiberglass on all six sides of the Blue M Oven assure perfect thermal equilibrium. Double wall reinforced construction, with the interior constructed of stainless steel. All wiring is enclosed and the oven comes ready to use.

SPECIFICATIONS

* TEMP. RANGE: 37.8°C to 260°C. (100°F. to 500°F.)
INSIDE DIMENSIONS (inches): 19Wx15Dx18H
CURRENT CONSUMPTION: 1600 Watts (Maximum)
Model No. OV-490: 115V/1 PH/60 C.A.C. $275.00

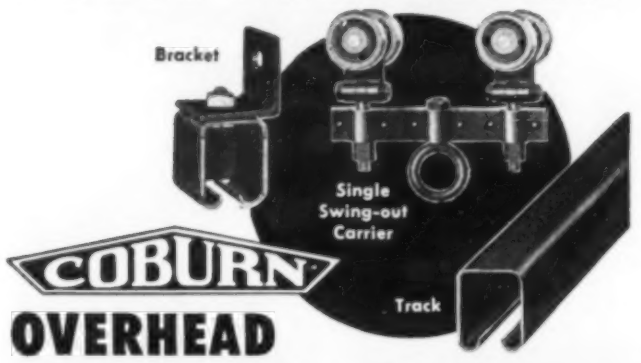
See your local dealer or write for Bulletin

BLUE 'M' LINE

BLUE M ELECTRIC COMPANY
306-308 West 69th Street, Chicago, Illinois

If you write maker identify as IEN - 1713

BOOST PRODUCTION



COBURN

OVERHEAD CONVEYING EQUIPMENT

Meet today's need for maximum plant production, increased efficiency and faster handling of materials with Coburn Overhead Conveying Equipment. It gives you unobstructed floor space, requires very little headroom, makes it easy to spot work directly over machines. Loads up to 3000 lbs. handled by hand chain or electric hoist; power-operated equipment also available.

For additional information write to Sales and Engineering, 56 Sterling St., Clinton, Mass., or consult your classified telephone directory. Write today for catalog #220.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, California

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION
CF&I

If you write maker identify as IEN - 1714

ORANGEVILLE HAND TRUCKS

"Keep Loads Alive"

Illustrated are a few of the many hand trucks we make for factory and warehouse use. They are typical of a wide range of available types and sizes which we can furnish in two-wheel and four-wheel designs. We also build special trucks to order to meet unusual handling needs.

Write for Catalog 50

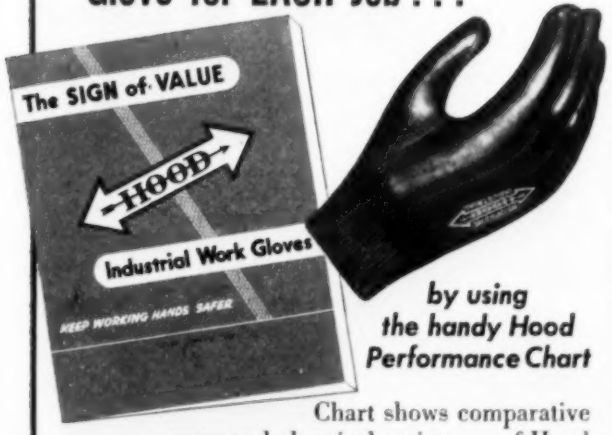
FLOOR TRUCKS ORANGEVILLE

ORANGEVILLE MFG. CO.
ORANGEVILLE 15, PA.
Established 1879

If you write maker identify as IEN - 1715

FREE *Send for your copy today*

NOW · · · You can choose the RIGHT Industrial Work Glove for EACH Job . . .



by using the handy Hood Performance Chart

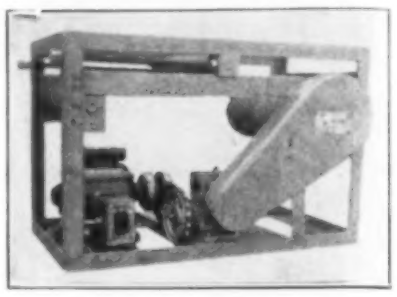
Chart shows comparative wear and chemical resistance of Hood Neoprene, Rubber and Plastic Coated Gloves; catalog contains eleven more pages of illustrations and description of Hood Industrial Gloves; the choice for *every* job in *any* industry.

HOOD RUBBER CO.
Watertown, Mass.

If you write maker identify as IEN - 1716

CONVEYING . . Motor drive unit for 12 to 36-in. belt at 5 to 100 fpm.

Source: ISLAND EQUIPMENT CORP.
27-03 Bridge Plaza, N., Long Island City 1, N. Y.



Simplifies installation

Package Power Unit is a new assembly of motor, take-up roller, idler roller, drive pulley, speed reducer and variable speed transmission in a structural frame. The unit can be positioned under the frame of a live roller or belt conveyor or under a gravity roller conveyor to convert it for belt operation. It is available in various sizes with motor rating from ¼ to 1½ hp. Overall length is 30 in. with depth at 20 inches.

If you write maker identify as IEN - 1717

WATERPROOFING . . Liquid solution to treat masonry, contains silicone

Source: A. C. HORN CO.
43-44 Tenth St., Long Island City 1, N. Y.

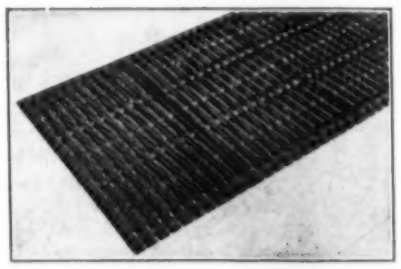
Alkali and acid resistant

Dehydratine No. 22 is a new clear water repellent liquid for application on untreated exterior masonry surfaces above grade. It can be applied by either brushing or spraying. It will not discolor or change the appearance of the surface. The liquid penetrates into the masonry pores without closing them so the masonry can continue to "breath". The material is not recommended for extremely porous surfaces such as cinder concrete blocks. It should not be used below grade under hydrostatic pressure or on the inside of weather exposed walls except to retard efflorescence.

If you write maker identify as IEN - 1718

FLOORS . . Molded rubber mat, safe tread ridges and drain openings

Source: AMERICAN MAT CORP.
1711 Adams St., Toledo 2, Ohio



$1.76 per square foot

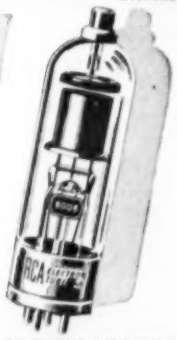
Rubber compound in the molded construction of this new Traffic Tred mat has sufficient strength so no cord is required. The mat measures $\frac{3}{16}$ in. in thickness and is available in 24, 36 by 48 in. widths. It can be supplied in 12 and 18-in. lengths or in continuous sections of any length. It can be trimmed to special sizes. The top presents a triple ridged surface with rectangular perforations, and diagonal ridges for drainage on the bottom side. Colors are black and rose.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1719

IT'S ALLIED FOR RCA Authorized RCA Distributor

ELECTRON TUBES FOR INDUSTRY



Quick, Expert Service
ALLIED stocks for *quick shipment*, the world's largest distributor inventory of RCA special-purpose tubes. We specialize in supplying the needs of industrial, broadcast, governmental and other users. To save time, effort and money—phone, wire or write to ALLIED for quick shipment. Fill *all* your electronic needs from one complete source.

ALL TUBE TYPES IN STOCK

- Vacuum Power
- Thyratrons
- Vacuum & Gas Rect.
- Ignitrons
- Cold-Cathode
- Phototubes
- CR Tubes
- Camera Tubes
- Monoscopes
- Special Types

1953 ALLIED CATALOG

Refer to your ALLIED Catalog for *all* electronic supplies. Write today for FREE copy of the complete 236-page 1953 ALLIED Catalog.

FREE Interchangeability Directory
Valuable guide to selection of proper RCA tube type replacements. Lists 1600 tube types. Write for Free RCA Guide No. 37-046.

Everything in Electronics
FROM ONE RELIABLE SOURCE
ALLIED RADIO
833 W. Jackson Blvd., Dept. 14-B-3
Chicago 7, Ill.

FREE!—Send for it today!

If you write maker identify as IEN - 1720

LOOK

FREE fan catalog for '53!

New models, new finishes have been added to the Emerson-Electric fan line—most complete fan line in America. See these fans for every commercial, industrial and institutional use. For free catalog write Dept. T106.

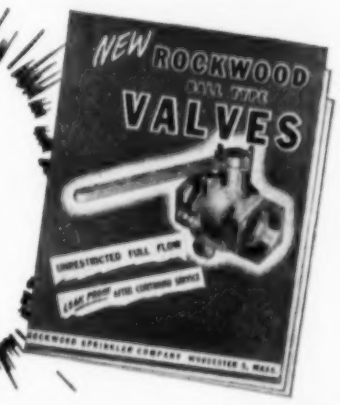
THE EMERSON ELECTRIC MFG. CO.
St. Louis 21, Mo.

EMERSON ELECTRIC
FANS • MOTORS APPLIANCES

If you write maker identify as IEN - 1721

Get this fact-filled booklet on

The valve that's breaking records



Throughout industry Rockwood Ball Valves are chalking up new records for long life, safety and economy. Features like these tell you why:

Full Round Flow . . . Quick Opening and Closing . . . Resists Wear Longer . . . Stays Leak-proof.

Ideal for handling water, air, carbon dioxide, nitrogen, alcohol, paper fluids, paraffin and asphalt base petroleums and many other liquids and gases. Tested by Underwriters' Laboratories, Inc.

Get complete details on this great new advancement in valve engineering. Send for booklet. Rockwood Sprinkler Company, 40 Harlow Street, Worcester 5, Mass. Distributors in all principal cities.

ROCKWOOD BALL VALVES
THE FLOW IS AS ROUND AS THE PIPE ITSELF

If you write maker identify as IEN - 1722

Viking

• THE ORIGINAL COMPOUND SHEAR

CUTS BAND IRON •
¼" BRASS (any width)
• COPPER, SHEET IRON
TIN, BAND
SAWS (any thickness or width)
• 12 GAUGE BESSEMER STEEL

IMMEDIATE DELIVERY $29.00

VIKING SHEAR COMPANY
1065 W. 20th ST. • ERIE, PA.

If you write maker identify as IEN - 1723

BUILDING DOLLARS GO FARTHER

Industrial users find that Armco Steel Buildings save money 3 important ways.

1 Quick, easy erection is assured with a small unskilled crew. Unique STEELOX construction provides both structural support and finished surface.

2 You get trouble-free service at low cost. Armco Steel Buildings are noncombustible and lightningsafe when properly grounded. The STEELOX Joint can't open up or pull apart. Your building remains rigid and weathertight year after year.

3 Ideal for permanent or temporary sites. Should conditions change your building can easily be extended, doors and windows rearranged, or it can be moved to a new location without loss of material.

WRITE FOR THE COMPLETE MONEY-SAVING STORY

ARMCO DRAINAGE & METAL PRODUCTS, INC.
1333 Curtis Street, Middletown, Ohio

If you write maker identify as IEN - 1724

CLARK 1953 POWRWORKERS

"Job Engineered" to do a hundred and one jobs

POUND FOR POUND, dollar for dollar, you can't beat the value in CLARK'S POWRWORKER Line. Here's fast, safe handling for narrow aisles, low-load floors, limited budgets. The POWRWORKERS feature short turning radius, easy fingertip control, ample power plant, and cast steel construction. • Ask your CLARK dealer about the POWRWORKER models: stacker, pallet truck, platform truck, tug tractor—'walk 'em or ride 'em.'' They're job-engineered to cut costs in a hundred and one ways.

1903 CLARK EQUIPMENT

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS
AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BUCHANAN 49, MICHIGAN
Please send: ☐ Powrworker literature ☐ Material Handling News ☐ Have Representative Call.
Name
Firm Name
Street
City Zone State

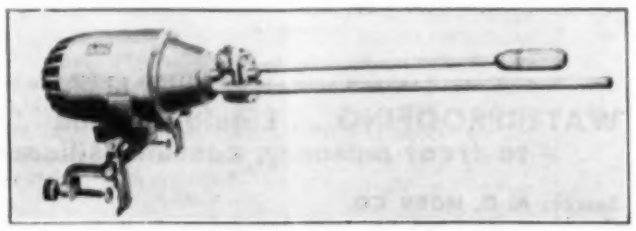
AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

IDEAS FOR YOU

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

Identify as IEN - 1726

Knife blade, positioned in the path of a fluid jet delivered by a motor driven pump, sets up ultrasonic vibration in the



blade to produce emulsions or dispersions in the fluid. The blade and jet are enclosed in a bell housing. They form part of the pump and motor assembly in equipment soon to be available in the United States. Output is 5 to 7 gpm. with a 2-hp. motor. Ultrasonics Company will send you preliminary printed information on request.

Identify as IEN - 1727

If you want a rotary drive that will run satisfactorily where it is very hot indeed, we suggest a Gast rotary vane air motor. Recently one of these motors, rated at 3 hp., was applied on a pump to handle molten zinc in a location so hot that the pump body was cherry red. The motor operated without any difficulty aside from some carbonization of the lubricant in the bearings.

Identify as IEN - 1728

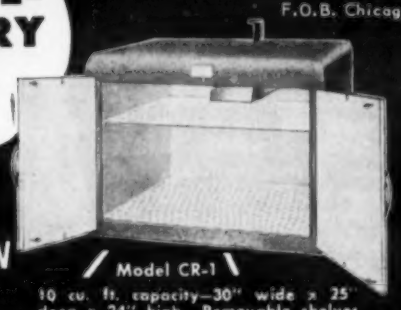
Oxygen and hydrogen are reunited into water, after they have been liberated from the electrolyte, by means of a catalyst in a new battery vent cap. Hydrocap trade names the new device. It is made by Industrial Research for any size and make of battery. A set of three costs a bit less than $3.50. The water will remain at a safe level in the battery without attention. The caps capture the sulphuric acid fumes also and wash them back into the battery. They warn against overcharging by turning hot to the touch. Palladium is the catalyst.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1729

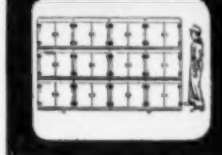
ELECTRIC OVEN • Only $79.50 F.O.B. Chicago

GRIEVE-HENDRY PORTABLE ELECTRIC OVEN



Model CR-1
10 cu. ft. capacity—30" wide x 25" deep x 24" high. Removable shelves and drip pan.

FOR PRODUCTION OR LABORATORY USE



Portable. Adjustable temperature control to 225°F. Fan driven forced air circulation. Uniform temperature throughout. Plugs into any 110V wall outlet—no special wiring required. Can be used in a group or bank.

Standard Models with Temperature Ranges to 1000° F. Available.
Prompt Quotations on Ovens Built to Your Specifications.
Write for literature

GRIEVE-HENDRY CO., INC.
1815 W. LAKE ST. Dept. IEN CHICAGO 12, ILL.

If you write maker identify as IEN - 1730

CARBON BRAZING TIPS
...with the famous Stackpole "F" Treatment

STACKPOLE'S recently developed "F" treatment for its Carbon Brazing Tips has resulted in units that operate at temperatures above red heat, require dressing far less often, and increase tip life four to five times that of untreated carbon by minimizing oxidation. Their resistance to cracking or spalling permits more radical temperature changes than is possible with any other material.

SAMPLES...sent for test. State size and shape. Mention company affiliation.

STACKPOLE STACKPOLE CARBON CO. ST. MARYS, PA.

EXPORT: Stackpole Carbon Co., 254 W. 34th St., New York 1, N. Y., U. S. A.

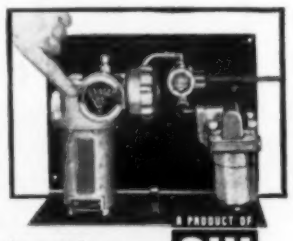
If you write maker identify as IEN - 1731

BEARING LIFE EXTENDED 1,013 HRS. with NEW ALEMITE OIL-MIST AUTOMATIC LUBRICATION SYSTEM

BEFORE Oil-Mist: Spindle bearings on a grinder at a leading manufacturing company* were able to operate only 100 hours without replacement. Replacement cost of a complete spindle was $90, or $18 for new bearing replacements. *Plus* 3 hours down time. *Plus* labor costs.

AFTER Oil-Mist: The same grinder has been running 1,113 hours—*and the spindle is operating as satisfactorily as if new bearings had just been installed.* After deducting the cost of Oil-Mist plus installation, this one unit has shown a savings of over $600!

what is... OIL-MIST?



A PRODUCT OF SW STEWART WARNER

It is a new, unbelievably simple lubrication system that atomizes oil into mist and distributes it through tubing to bearings. Oil-Mist bathes all bearing surfaces with fresh, clean, cool oil film. Uniformly maintains oil film on plain and anti-friction bearings, gears and chains regardless of variations in load, temperature or speed! No "peaks and valleys" of lubrication.

Fully automatic, Oil-Mist eliminates waste and the uncertainties of the "human element." Extends bearing life as much as 17½ times. Seals bearings against dirt and abrasives. Cuts oil consumption as much as 90%. Greatly reduces the number of oils needed.

Get the facts NOW!

Just out! This new catalogue brings *you* the complete story on Oil-Mist. Specifications, models, typical applications, actual case histories. Get yours now. Write Alemite Division of Stewart-Warner, **Dept. K-23,** 1850 Diversey Parkway, Chicago 14, Illinois

**Name on request*

If you write maker identify as IEN - 1733

STEAM

FOR HEAT OR PROCESS

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability

Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p., for pressures up to 250 p.s.i. or for hot water heating.

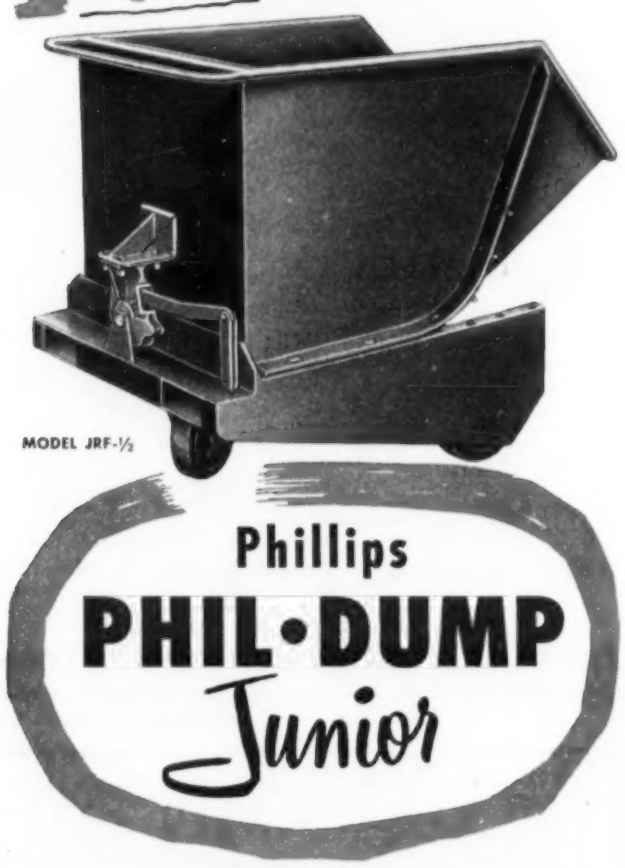
For complete details, write for Catalog 417

SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emmaus, Pa.
Exec. Offices: Times Bldg., Times Sq., New York N. Y.
SUPERIOR STEAM GENERATORS

If you write maker identify as IEN - 1734

Ideal

FOR PUSHING BY HAND... OR FORK LIFT TRUCK USE



MODEL JRF-½

Phillips
PHIL•DUMP
Junior

Correctly sized for speed and convenience when being transported by hand . . . the Phil-Dump Junior is sturdily built to withstand rough service when being handled by fork lift trucks. With its capacity of one-half cubic yard, this valuable materials handler features a self-dumping hopper . . . which returns and locks in the loading position after it has been emptied.

For outstanding economy through years of service the Phil-Dump Junior is ruggedly made of an all-welded, steel construction. The rear wheel is castered for ease in maneuvering; hard rubber tires prevent damage to plant floors.

Write for Bulletin E-1A

VERSATILE IN SERVICE

Without danger of tumbling the hopper, the Phil-Dump Junior can be emptied while still on the fork lift truck.

MANUFACTURERS SINCE 1863 PHILLIPS MINE AND MILL SUPPLY COMPANY PITTSBURGH, PA.

MATERIALS HANDLING EQUIPMENT

2500 JANE STREET • PITTSBURGH 3, PA.

IDEAS FOR YOU—Continued

Identify as IEN - 1736

Detroit Diesel Engine Division of General Motors sent us a picture of a unique combination of its engine and an Inger-

soll Rand compressor with a tractor that mounts a frame carrying six Ingersoll Rand rock drills. The drills ride 1 ft. apart on the tractor assembled frame. The wheel mounted compressor tags along behind. It takes only a little time to remove a strip from a concrete pavement to reach an underlying utility line. The drills drive down through 11 in. of paving in about 90 seconds.

Identify as IEN - 1737

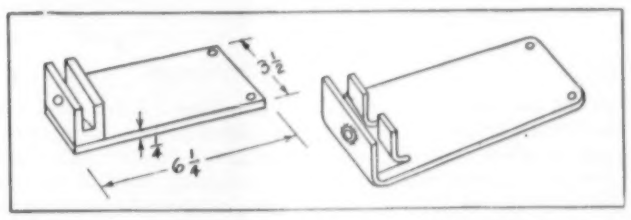
G. B. Benander, a General Electric Company managing engineer, has come up with a new method of wire termina-

tion in wiring devices such as convenience outlets and switches. The development centers in new pressure locks inside each device which hold stripped lengths of the wire leads against a contact plate. The grip will withstand a pull-out test of about 75 pounds based on No. 14 AWG wire.

Binding screws are eliminated from the assembly. Connections are fully insulated since they are enclosed in the device housing. Wires can be released from the terminals by pressing a small screw driver in a "release" slot. The company plans to apply the new method of termination to a complete line of wiring devices in addition to the convenience outlet and switch that are now available.

Identify as IEN - 1738

A few metal parts were required in a design that employed two pieces, a plate and a channel welded together. Dayton



Rogers Manufacturing Company was requested to bid. It came up with the illustrated product. Now there is one piece that starts as a flat plate. Its end is formed up and, at the same time, two ears are pierced and formed as shown. The finished job measures 6¼ by 3½ by ⅛ in. and carries three small threaded holes. Piece cost came to $1.35.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1739

Protective Coatings for Metal

STOP Scaling and Corrosion

A CHEMICAL TREATMENT APPLIED LIKE PAINT

WHAT IT DOES

PROTECTS AGAINST . . .

- Corrosion and Scaling at high temperatures up to 1850°F.
- Acids
- Alkalies
- Oxidation

WHERE IT IS USED

Stacks • High Pressure Boilers • Exhausts • Breeches • Blowers • Stokers and Burners • Mufflers • Pickling and Plating Equipment • Vulcanizing Equipment

FOR FREE TEST SAMPLE — Write outlining your intended use, giving kind of metal, corrosive conditions and approximate minimum and maximum temperatures.

Markal COMPANY
3075 West Carroll Avenue • Chicago 12, Illinois

If you write maker identify as IEN - 1740

Just because that bathing suit is proper at the beach, she shouldn't assume it's proper for the classroom, too!

And just because one bearing is best lubricated by one particular grade of oil, you shouldn't assume that the same oil is best for *all* bearings on that machine. In many cases it isn't.

OIL CUPS permit you to lubricate each bearing with the oil best suited to that bearing—thus prolonging bearing life, reducing maintenance costs, cutting down-time, boosting production. And oil cups fortunately *cost very little*.

Gits oil cups have been the standard for industry for more than 40 years. Gits Bros. has the largest selection of oil cups available anywhere. Call on Gits Bros. for a prompt, efficient solution to your lubrication problems.

Write for free Catalog No. 60-A

GITS BROS. MFG. CO.
1854 S. Kilbourn Ave. • Chicago 23, Ill.

If you write maker identify as IEN - 1741

free Bulletin

ON Delpark

FULL FLOW, SELF CLEANING
INDUSTRIAL FILTRATION

Here's literature that can help you solve filtration problems in your plant.

The famous Delpark Industrial Filter is designed for the maximum of filtration with the minimum of maintenance.

Full flow, self cleaning, continuous, fully automatic, Delpark Industrial Filter applications include the filtration of coolants, quenching oils, paint spray-booth water, air-conditioning wash water, and numerous other applications.

Write today for this free booklet and acquaint yourself with the facts on the finest in Industrial Filtration.

Backed by More Than 30 Years in Industrial Filtration

INDUSTRIAL FILTRATION COMPANY
95 INDUSTRIAL AVENUE LEBANON, INDIANA

If you write maker identify as IEN - 1742

...for the assembly line!

Completely welded, machined, heat-treated and tested—this Hackney Deep Drawn Part is ready for the manufacturer's final assembly line.

Figure the economy of *ready-to-use* Hackney component parts for your products. And remember that strong, lightweight Hackney Deep Drawn Shapes, Shells and Pressure Reservoirs can be designed in many shapes and sizes—in capacities from 1 quart to 150 gallons. For further information, write today.

Hackney PRESSED STEEL TANK COMPANY
Manufacturer of Hackney Products

1449 S. 66th St., Milwaukee 14 • 1322 Vanderbilt Concourse Bldg., New York 17
253 Hanna Bldg., Cleveland 15 • 936 W. Peachtree St., N.W., Room 135, Atlanta 3
208 S. LaSalle St., Room 786, Chicago 4 • 577 Roosevelt Bldg., Los Angeles 17 •
18 W. 43rd St., Room 23, Kansas City 11, Mo.

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

If you write maker identify as IEN - 1743

this time-study saves you money!

BUSINESSES SAVE HOURS EACH DAY

you save 16 seconds every time you press a button

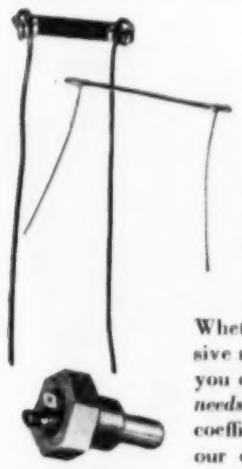
Actual time studies taken in hundreds of businesses show that an average of 18 seconds is required to make an "inside" speech contact through the switchboard. With *your own* AMPLICALL "clear line" *internal* communication system—you get *2-second speech contact* within and between departments. AMPLICALL frees busy switchboards for important outside calls—keeps personnel *on the job*, keeps talk terse—saves hours each day for the average business. AMPLICALL saves you money—pays for itself. There is a system to fit your special needs. Get the full facts today!

ELECTRONIC **AMPLICALL** INTERCOMMUNICATION

SEE YOUR PHONE BOOK
For your nearest AMPLICALL specialist, look under "Intercommunication" in your classified phone directory—or write direct for full information.

RAULAND-BORG CORPORATION
3523-K Addison Street, Chicago 19, Illinois

If you write maker identify as IEN - 1744



made right to work right

BENDIX-FRIEZ

high-precision thermistors

Whether you use these temperature responsive resistors in standard or special models, you can be sure of this. *They'll match your needs* for resistance values, size, temperature coefficient, mountings and quality. Made in our own plant under carefully controlled conditions, Bendix-Friez Thermistors know no equal.

Used in this typical application for sensing temperature of hydraulic oil.

STANDARD TYPES FOR IMMEDIATE DELIVERY

Size (inches)	@ +30°C.	@ 0°C.	@ −30°C.
.140 x .75	45.0 ohms	86 ohms	194 ohms
.040 x 1.5	12,250 ohms	26,200 ohms	65,340 ohms
.018 x 1.5	35,000 ohms	82,290 ohms	229,600 ohms

Write for details.

FRIEZ INSTRUMENT DIVISION of Bendix Aviation Corporation
1428 Taylor Avenue, BALTIMORE 4, MARYLAND
Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

If you write maker identify as IEN - 1745

with AURAND CLEANING TOOLS

Clean off accumulations of scale, paint, rust or any foreign matter from any hard surface with Aurand Cleaning Tools. Toothed cutting wheels, loose pinioned on rotating head chip away accumulations at high speed. Positive depth shoe prevents cutting into permanent surface and assures uniform cleaning of entire area.

Two sizes in electric or pneumatic models.

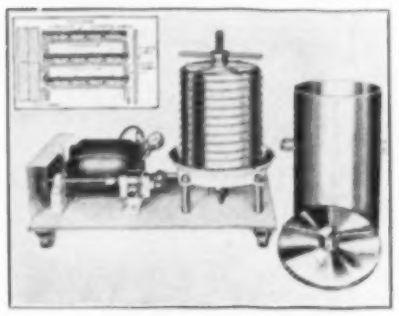
FOR FULL DETAILS, WRITE DEPT. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI OHIO

If you write maker identify as IEN - 1746

FILTERING . . Plate type unit for liquids, 200 to 2,000 square feet

Source: ERTEL ENGINEERING CORP.
11 Clinton Ave., Kingston 8, N. Y.



Features center feed

Liquid to be filtered enters at the bottom center of this new Model-ECF filter. It passes upward through the annular space surrounding the center spindle to enter channels between the filter plates. It turns to move downward through the filter media and out through passages to the annular space between the plates and the outer housing to the outlet connection. The assembly is available with two to 20 filter plates, each taking sheets rating 100 sq. in. of filter area.

Construction is characterized by the separate clamps that secure the plates and prevent leakage between the housing and the top cover. Stainless steel is standard. Nickel plated bronze can be specified. Typical applications are in filtering volatile solutions, perfumes, chemicals, drugs, cosmetics.

If you write maker identify as IEN - 1747

PROTECTING . . Fiberglas helmet for arc welders, light and strong

Source: AMERICAN OPTICAL CO.
12-16 Mechanic St., Southbridge, Mass.

Will not warp

Four designs are included in the company's new Series-700 Fiberglas welding helmet reinforced with polyester resin. Number 702-3-C has an insulated steel glass holder including a Filterweld plate and clear cover plate. Number 700-3-C has a plastic glass holder and the two plates. Number 704-3-C mounts a plastic lift-front glass holder and No. 705-3-C is fitted with an insulated Dowmetal lift-front glass holder.

Headgear No. 3 is standard equipment. It is made of a new plastic that will not absorb moisture. It conforms to any head shape. It can be cleaned in antiseptic solution or in soap and water. Its floating joint suspension is integral with a ratchet headgear adjustment.

Identify as IEN - 1748

You can save some time in hole-at-a-time drilling work that involves a template and a large number of holes closely spaced. Just cover the template with self-adhesive free stripping tape before you start drilling. Then the chips cannot fall into the template holes that have not been completed. Remove the remaining tape when all the holes are drilled and retape the template for the next work piece. Minnesota Mining and Manufacturing Company told us. Yes, it sells the tape.

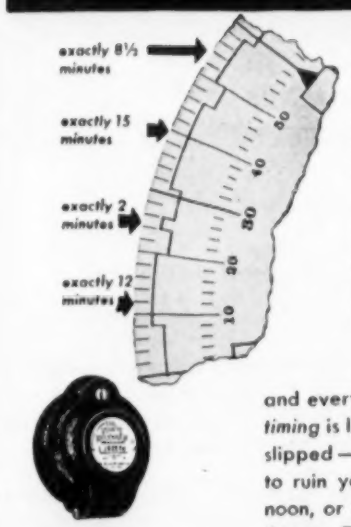
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1749

NO MORE GUESSWORK!

PROCESS TIMING

automatically recorded by a Little "TIME CLOCK"



Bolt this 2 lb. Recorder right to the machine itself; Let the "Process" record itself on the chart —(No ink, no pencil, no wires; the record is recorded in wax).

"The cure must be 8½ minutes"—"the heat must be applied exactly 15 minutes"—"the plating must take just 2 minutes"—"the pigment must be mixed just 12 minutes"—etc.

The *Servis Recorder* checks on this—it records just what happened—it "*times the process.*" You are no longer in the dark; from now on you know all day and every day whether your *process timing* is lived up to—or if somebody slipped—if something went wrong to ruin your product for that afternoon, or that whole shift! Write for Process Timing Catalog. The Service Recorder Co., 1375 Euclid Avenue, Cleveland 15, Ohio.

The Servis Recorder
"The Time Clock" for Machinery

If you write maker identify as IEN - 1750

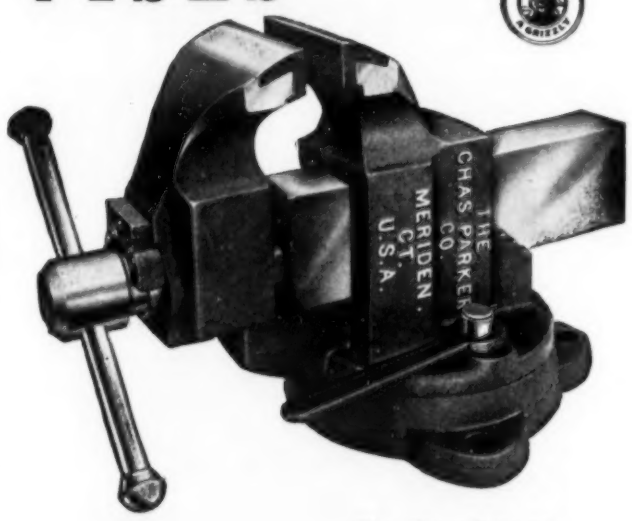
what are your DELIVERY requirements FOR hydraulic pumps?

- If you need **PROMPT** delivery to expedite production . . .
- If you need **PUMP** delivery from .4 to 40 gallons per minute . . . at operating pressures up to 1000 p.s.i. (in some sizes, 1200 continuous, 1500 intermittent) . . .

GEROTOR MAY CORP.,
BALTIMORE 3, MD.

If you write maker identify as IEN - 1751

PARKER VISES



The Complete Line

Write for catalog

Machinists • Top Swivel Jaw
Combination Pipe • Hinge Pipe
Woodworkers • Utility

STOCKED BY DISTRIBUTORS EVERYWHERE

THE CHARLES PARKER CO., MERIDEN, CONN.

If you write maker identify as IEN - 1752

DON'T *YOU* GET CAUGHT

...with inadequate identification!

COLOR ALONE is Not Enough! Your pipes should be marked so that anyone can identify them at a glance—emergencies wait for no man.

Westline Tel-A-Pipes mark pipes in clear, easy-to-read wording—no color codes to memorize—no costly pipe painting or stenciling. They cost a few cents and are applied in a second.

Tel-A-Pipes are printed signs with self-adhesive backing—stick and stay stuck to pipes without moistening—never curl off. More than 200 stock words or printed to your specifications. Write for complete details. Dept. IEN-2.

WESTLINE *Tele-A-Pipes*
Division of Western Lithograph Company
600 East Second Street • Los Angeles 54, California

If you write maker identify as IEN - 1753

HOBBS

EST. 1883

TANGLE-PROOF LOCK WASHERS

You can *depend* on Hobbs spring lock washers to meet all job requirements and government specifications. Available in high carbon steel, stainless steels, silicon and phosphor bronze, and all types of platings.

HOBBS COTTER PINS are available in steel, brass, stainless steel, and monel in extended prong (Loxit) and hammer-lock (HobLok) types. HobLok cotter pins lock themselves when hit with hammer!

Write now for Hobbs lock washer and cotter pin price lists!

HOBBS MANUFACTURING CO.
Fastener Division
40 SALISBURY ST., WORCESTER 5, MASS.

EST. 1883

If you write maker identify as IEN - 1754

At Last!

For Conferences— Sales Meetings— Staff Meetings— Lectures

A TABLET ARM CHAIR THAT *FOLDS!*

The Greatest Advance in the History of Folding Chairs

Undoubtedly, you've wished for a chair like this many times. Now it's here—perfected—ready to go to work for you. Here is permanent convenience and comfort adapted for emergency use—the greatest advance in the history of folding chairs.

The tablet arm is a built-in feature of the chair, not an attachment. It is strong, easy to operate, a marvel of engineering ingenuity (patent pending). For ordinary chair use when the arm is not needed, it folds down, out of the way, beside the chair, and flat *against* the chair for quick, safe stacking. The flat, folded depth of the chair is only 3 inches. The chair can be folded or unfolded in a matter of seconds. It is exceptionally easy to get into and out of this tablet arm chair.

Built throughout with all the famous Clarin insistence on utmost quality, the Clarin Tablet Arm Folding Chair will give years of faithful service. It is a supremely strong X-type chair, self-leveling, welded to insure exceptional strength and quietness. Its cushioned rubber feet, a Clarin exclusive, can't mar the finest floor. It comes with Clarin's famous reinforced seat of 5-ply plywood, or it can be had with fine quality leatherette on seat and back, or on seat alone. Available in wide range of frame and upholstery colors.

Clarin Mfg. Company, Dept. 30,
4640 W. Harrison St., Chicago 44, Ill.

Clarin

There is a Clarin Folding Chair for every purpose and need. Write today on your institution's letterhead for beautiful, new, FREE Catalog of the complete line.

SINCE 1925 . . . THE ARISTOCRAT OF FOLDING CHAIRS

If you write maker identify as IEN - 1756

WOODWORKING . . Splicing machine edge glues, flattens 1/32 in. veneer

Source: PLYCOR CO.
563-67 W. Washington Blvd., Chicago 6, Ill.

Provides steady smooth operation

Model FL-5 is a new Fisher cross feed veneer splicer. It is available in two working widths of 70 and 90 inches. It will edge glue veneers as thin as 1/32 inch. It performs a flattening operation at the same time and so is suited for manufacture of face as well as for cross banding and center veneers.

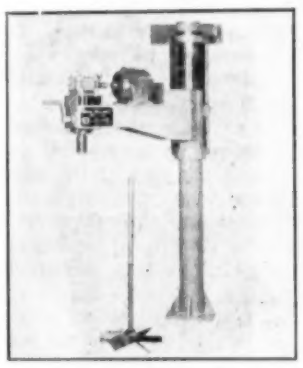
The work is prepared in the usual manner, preferably on a traveling head veneer jointer. The edges are coated with any suitable urea resin and, after the glue has become fairly dry, the veneer strips are fed through the splicer with the grain of the wood at right angles to the direction of flow. The veneer emerges as a continuous strip to the outfeed end where a clipper, supplied by the user, is installed to cut to the required widths for veneer manufacture.

Output, at steady speed, is variable between 3 and 13 fpm. over two transport rails which also provide the necessary edge pressure to glue the joint without overlap. The feed mechanism closes gaps as wide as 2 inches. During the movement the entire veneer surface is heated to set the glue.

If you write maker identify as IEN - 1757

MIXING . . Radial machine positions over circle of containers

Source: INDUSTRIAL PROCESS ENGINEERS
6-10 Lister Ave., Newark 5, N. J.



For production use

The radial head of this new Change Can mixer is mounted to swing around its supporting column to position a push-and-turn coupling over the center of any one of a circle of containers placed around the column. The arm mounts a driving motor, a worm type speed reducer and a vertical sealed ball bearing shaft terminating in the coupling. Each container in the circle is intended to carry its own impeller so no cleaning will be required between containers. Radial distance from the center of the column to the center of the coupling measures 31 inches. Overall column height is 6½ feet. A ½ to 7½-hp. motor can be specified.

Impellers are available in straight, curved, pitched or compound blade designs in diameters from 12 to 30 inches. The 1-hp. assembly operates at about 100 rpm. and will drive a 15-in. impeller. A crank at the front of the radial arm connects by a worm and gear to a rack on the head support so the head can be raised and lowered to clear a container and to position the impeller in a container.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1758

STICHT TACHOMETERS

FOR EVERY NEED... EVERY SPEED

ACCURATE · DEPENDABLE · QUALITY BUILT

CENTRIFUGAL HAND TACHOMETERS

Universal Type U with 5 ranges in one instrument.

CAT. NO. 303, 30-12,000 RPM
CAT. NO. 314, 45-18,000 RPM
CAT. NO. 322, 60-24,000 RPM
CAT. NO. 346, 120-48,000 RPM

Many other models with one, three or five ranges.

BULLETIN NO. 750

CHRONOMETRIC HAND TACHOMETERS

"Jaquet" Speed Indicators with built-in chronometer movement. Timing period 3 or 6 seconds. Guaranteed accuracy 1/2 of 1 per cent.

CAT. NO. 2301, 0-10,000 RPM
CAT. NO. 2302, 0-1,000 RPM
CAT. NO. 2304, 0-100 RPM

Suitable double rated speed.

Nine models. Various accessories.

BULLETIN NO. 735

CENTRIFUGAL STATIONARY TACHOMETERS

For permanent mounting on machines. Model J. Sizes 3 in., 4 in., 5½ in., 8 in. and 10 in. dial diameters. Flexible cable driven. Many standard ranges reading RPM, FPM, YPM, etc.

BULLETINS NOS. 794, 795, 796

HERMAN H. STICHT CO., INC. 27 PARK PLACE, NEW YORK 7, N. Y.
Tachometer Headquarters

If you write maker identify as IEN - 1759

"Easiest fuse to renew I ever used. It's G-E"

"Only three pieces to handle—plus the link—when I renew blown links in this new General Electric time-delay fuse. It's a well-made, sturdy fuse, too. I like the ribs on the cap—they give a better grip than knurling. You can tell at a glance which end comes off."

You'll like these other features of G-E fuses, too

1. All contact surfaces on renewable fuses are silver-plated to eliminate heat caused by oxidation.
2. Newly designed links give accurate and consistent time-delay.
3. The simple three-piece construction applies to ferrule type fuses, too. This fuse has a patented hinged contact plate—no washers to drop.

For complete data, address Section D54-242, Construction Materials Division, General Electric Company, Bridgeport 2, Conn.

You can put your confidence in—

GENERAL ELECTRIC

If you write maker identify as IEN - 1760

MADE TO STARRETT STANDARDS OF ACCURACY AND PERFORMANCE

WRITE FOR YOUR COPIES

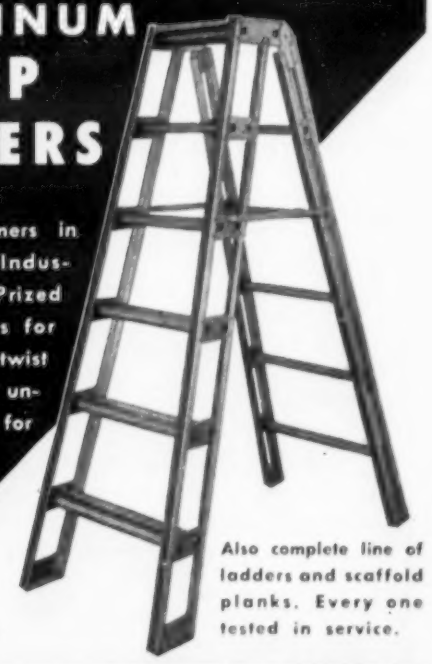
DIAL INDICATOR CATALOG describes and illustrates the complete line with specifications and useful data . . . Address Department N.

TRANSFER and DIMENSION CHARTS. Full scale details for quick tracing plus complete dimensions of all indicators and contact points.

Starrett
THE L. S. STARRETT COMPANY
Athol, Massachusetts, U. S. A.
SINCE 1880
WORLD'S GREATEST TOOLMAKERS
Buy THROUGH YOUR INDUSTRIAL DISTRIBUTOR

If you write maker identify as IEN - 1761

HEAVY DUTY ALUMINUM STEP LADDERS



Proven performers in all types of Industrial plants. Prized by Contractors for resistance to twist or wobble. An unexcelled value for heavy service.

Also complete line of ladders and scaffold planks. Every one tested in service.

LOUISVILLE LADDER COMPANY
1101 W. Oak St. — Dept. 8A — Louisville 10, Ky.

If you write maker identify as IEN - 1762

THE SCHRAMM
Pneumatractor

CAN

PUSH front end loader with bucket (illustrated), or angle dozer blade, rotary sweeper, snow plows, etc.

PULL anything a wheel tractor will, with either front or rear winch.

POWER any hydraulically, mechanically and pneumatically operated equipment such as back hoe (illustrated), post hole digger, scaffold boom, etc.

PROVIDE AIR for any pneumatic tools that can be operated from a 105 C.F.M. AIR COMPRESSOR

SCHRAMM INC.
The Compressor People · WEST CHESTER · PENNSYLVANIA

SCHRAMM AIR COMPRESSORS

If you write maker identify as IEN - 1763

SENSITIVE, PRECISE PRESSURE-VACUUM CONTROLS

TYPE G9

The pressure vacuum control illustrated is an accurate, highly sensitive, precision-built unit. It may be had with an internal or external, calibrated or uncalibrated adjustment. It is water-tight unless the adjustment is external.

It is designed for applications requiring constant repeatability of any on-off differential between .2" and 10" w.c. For full details send for bulletin #5-1.

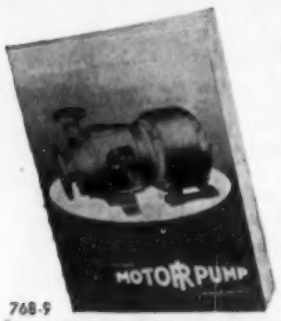
UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN - 1764

get this

. . . information on how to use a SMALLER pump for your jobs!



In this booklet are facts that prove you can use a *smaller* Ingersoll-Rand Motorpump to meet the same industrial pumping requirements as ordinary pumps of *larger* hp! This means you save on first cost . . . also on space, weight and power consumption. It's being done in other plants right now . . . find how you can do it, too.

768-9

CLIP AND MAIL, NOW

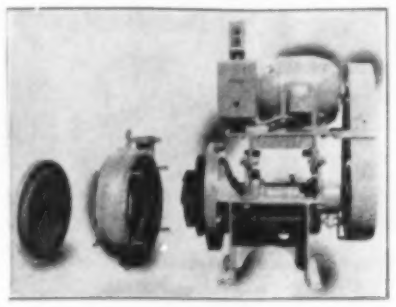
INGERSOLL-RAND CO., 11 Broadway, New York 4, N. Y.
Please send me, at no obligation, Booklet 7093-C on the complete line of I-R Motorpumps.

NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____
(Please Print)

If you write maker identify as IEN - 1765

PUMP . . Centrifugal design for fluids containing solids, acids

Source: GALIGHER CO.
543-47 W. 8th South St., Salt Lake City 4, Utah



Ask for Bulletin PB-52

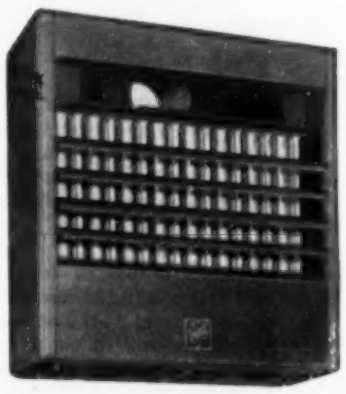
Vacseal trade names a new pump that is characterized by a set of small auxiliary vanes on the reverse side of the impeller next to the packing gland. These vanes produce a vacuum on the shaft seal. They prevent solids from cutting the shaft or the packing. Sealing water is not required for gland protection and fluids being handled will not come in contact with the seal. Pumping vanes are on the forward face of the impeller disc.

The pump is available in Ferloy iron to handle fluids with large particles against heads to 150 feet. It also can be specified in rubber lined construction in which the lining is vulcanized to the cast iron with a thermosetting cement. This design is suited for heads to 100 feet. The pump can be made acid proof by changing the gland bushing and installing a shaft sleeve. Lining materials, such as Neoprene or silicone rubber, can be specified. Vertical and horizontal designs are available. Sizes are 2 to 8 in. with capacity to 3,000 gpm.

If you write maker identify as IEN - 1766

HEATING . . Gas-fired space unit with motor driven fan, 65,000 btu.

Source: JAMES B. CLOW & SONS
231 N. Talman Ave., Chicago 12, Ill.



No. 170 is shown

The company announces addition of a new No. 65 gas fired assembly to its line of unit heaters. The assembly includes a one-piece cast iron heat exchanger, a 12-in. fan and a 1/20-hp. totally enclosed motor. A fan switch permits gas flow to the burners, when the thermostat calls for heat, but prevents the fan from turning on until the heat exchanger has warmed up. As a result the heater is prevented from blowing cold air at any time. The heater can operate on city or bottle gas equally well. Additional sizes in the line rate 210,000 btu. per hour.

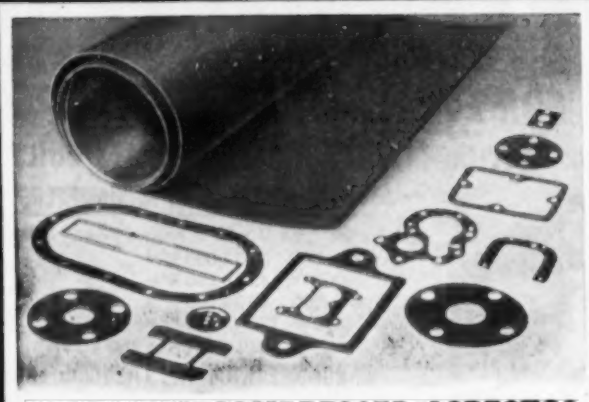
Identify as IEN - 1767

The bottle holding the glue on a carton sealing machine cannot be broken accidentally if it is a Plaxpak bottle made of polyethylene plastic. Plax Corporation makes it in many sizes to fit on your glue using equipment. It is translucent so you can see the stored adhesive.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1768

MELRATH GASKETS



GRAPHITED COMPRESSED ASBESTOS SHEET PACKING and GASKETS

MELRATH No. 125 . . . a high quality long fiber material resistant to acids, oils, steam, chemicals, etc. Proven for over 30 years.

There's a Melrath Gasket for Every Purpose!

MELRATH SUPPLY & GASKET CO., INC.
3501 MEMPHIS ST., PHILADELPHIA 34, PA.

If you write maker identify as IEN - 1769

Tap and insert in one operation with TAP-LOK INSERTS*

THE Tap-Lok Insert offers an effective, low-cost method of preventing stripping of tapped threads in softer-than-steel materials. It is a steel or brass bushing threaded internally and externally, and provides a hard, long-wearing thread surface.

Slotted segments at one end of the insert enable it to tap its own thread as it is turned into a cored or drilled hole equal in size to a tap drill hole for its external thread. This self-tapping feature eliminates the separate tapping operation required by other types of bushings, saving much time and labor.

The insert retains its seat firmly against vibration and affords maximum torque-and-pull resistance. Widely used as original equipment, the Tap-Lok Insert is ideal also for salvage and repair of stripped threads.

Send for descriptive folder.

Also manufacturers of Groov-Pins for positive locking press fit.

*Reg. U. S. Pat. Off.

GROOV-PIN CORPORATION
1127 Hendricks Causeway, Ridgefield, N. J.

If you write maker identify as IEN - 1770

low cost **CONDUCOTE** coating

MAY SAVE YOUR LIFE!

DISPERSES DANGEROUS STATIC CHARGES

A static explosion strikes without warning. The smallest spark might set it off. Be **safe** with spark-proof Conducote coating.

Applied to your floors, this plastic-like composition forms an electrically conductive surface that safely dissipates static currents. Installed for a **fraction** of the cost of most types of conductive flooring.

GIVES PERMANENT CONDUCTIVITY

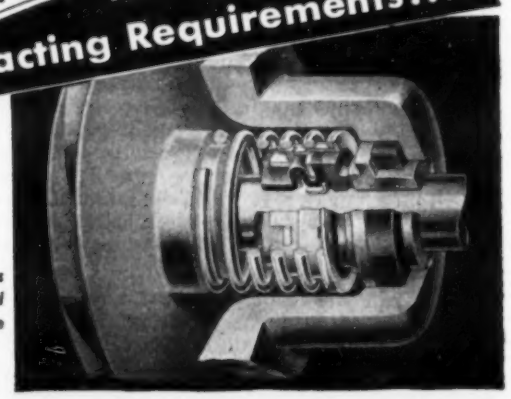
Conducote is **not a paint,** not a temporary finish. Retains necessary ohm resistance for **years** with **no special servicing.** Certified by Underwriters' and Electrical Testing Laboratories. Finish available in 5 colors. Write today for full information on Conducote and companion product NoStat.

WALTER G. LEGGE CO., INC.
101 Park Ave., New York 17, N. Y.
Branch offices in principal cities

YOU'RE SAFE WHEN YOU HAVE LEGGE TO START ON
LEGGE SYSTEM of Safety Floor Maintenance

If you write maker identify as IEN - 1771

There's a JOHN CRANE Mechanical Seal To Meet Your Exacting Requirements....



Here is Industry's most widely used General Purpose end-face seal.

Whatever your mechanical seal requirement may be, there's a "John Crane" Seal to "fit the bill". The Type 2 Seal, shown above, is widely used on such rotary shaft applications as centrifugal, rotary and jet pumps, gear boxes and gear reducers—at temperatures up to 250°F and, by special design, to pressures up to 500 psi. Other types are offered for specific equipment and services. For example, the 6A is a "pressed-in" design for small shaft, high speeds; the Type 9 incorporates a flexible member of Teflon* resistant to all corrosive services, temperatures to 485°F.

Our trained field engineers are ready to work with you in selecting the best "John Crane" seal for your needs.

Write today for our informative, fully illustrated catalog containing concise technical data and service recommendations on all "John Crane" Seals. Crane Packing Company, 1815 Cuyler Avenue, Chicago 13, Illinois.

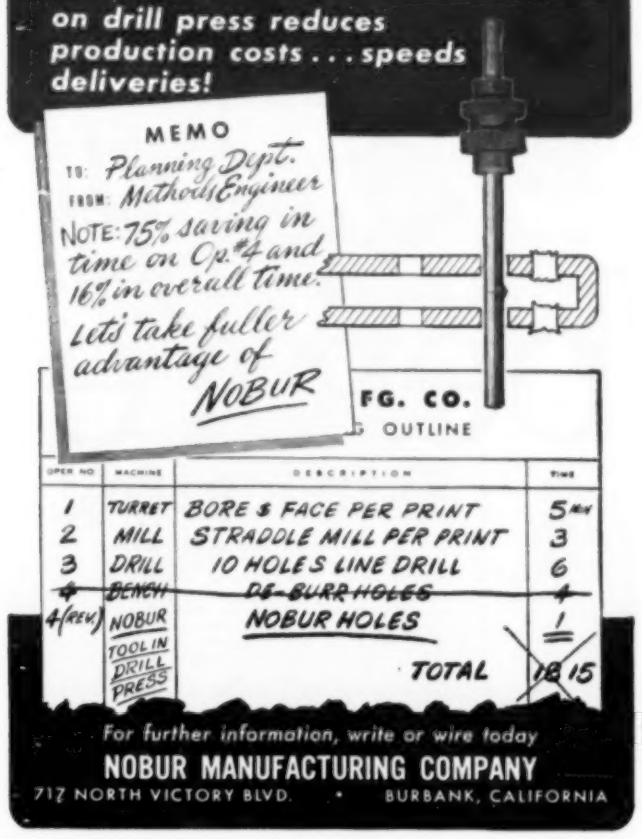
*DuPont Trade-mark for tetrafluoroethylene resin

JOHN CRANE CRANE PACKING COMPANY

If you write maker identify as IEN - 1772

Deburring with NOBUR tool

on drill press reduces production costs . . . speeds deliveries!



For further information, write or wire today

NOBUR MANUFACTURING COMPANY

717 NORTH VICTORY BLVD. • BURBANK, CALIFORNIA

If you write maker identify as IEN - 1773

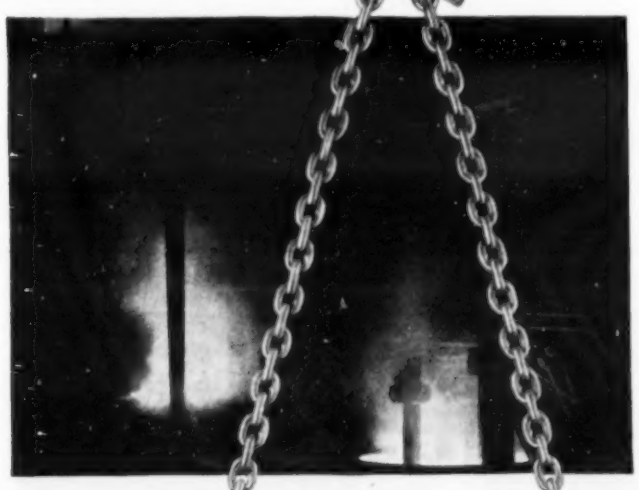
NONE BETTER...
America's First and Safest

HERC-ALLOY
SLING CHAINS

STRENGTH—Size for size, no other sling chain offers a greater tensile strength. HERC-ALLOY will not crystallize—never requires annealing.

SAFETY—HERC-ALLOY Sling Chains are made to your specifications. Every new sling carries a written guarantee, is registered and tested before shipping. This registration serial number is carried at the top link.

● Serial number permanently affixed near top link for positive identification.



● Identify HERC-ALLOY by the patented Inswell side weld with the extra swell of metal on the inside of the link.

EFFICIENCY—Lighter, stronger HERC-ALLOY Sling Chains feature the exclusive short, narrow link design which holds firmer, less tendency to kink, less gouging. Workmen handle HERC-ALLOY with less effort.

PREFERENCE—Men who buy and use sling chains are influenced only by facts learned through experience. HERC-ALLOY Sling Chain preference has been built up over the years, not just by what we say, but by how HERC-ALLOY performs on the job.

Write for Data Book No. 3 which contains much useful manufacturing and application information on HERC-ALLOY Sling Chains.

COLUMBUS McKINNON CHAIN CORPORATION
(Affiliated with Chisholm-Moore Hoist Corp.)
GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.
District Offices: New York • Chicago • Cleveland
Other Factories at Angola, N. Y., Dixon, Ill., St. Catharines, Ont., Can., and Johannesburg, South Africa.

If you write maker identify as IEN - 1775

GAGE . . Flexible manometer, webbed plastic tube and steel scale

Source: F. W. DWYER MFG. CO.
307 S. Western Ave., Chicago 12, Ill.

Rolls up to carry

Series 1211 is new design of the company's flexible manometer, previously described IEN-8748-51. The new unit employs a convexed spring steel scale that makes the manometer self supporting when it is in extended position but does not interfere with rolling up to fit into a pocket or service kit.

The webbed tube body is made of vinyl plastic. The assembly is available in standard ranges from 8 in. to 10 ft. or water or mercury. Caps cover the tube ends to prevent loss of liquid when not in use.

If you write maker identify as IEN - 1776

CLEANING . . Powdered material for use on workers' hands and arms

Source: MAGNUS CHEMICAL CO.
252 South Ave., Dept. IEN, Garwood, N. J.

Free sample upon request

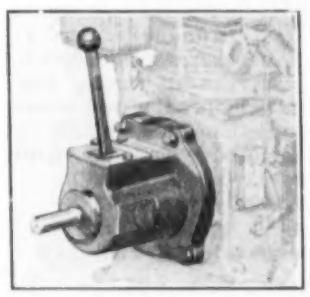
Magnus Cob is a new lightweight free flowing powdered material containing corn meal as the cleaning abrasive. It also contains lanolin and a toilet grade soap powder. It makes a good lather with water and rinses readily.

The cleaner will not rot, ferment, attract vermin or clog drains. It is packed in 90 and 185-lb. drums. It is recommended for women workers as well as men.

If you write maker identify as IEN - 1777

DRIVE . . Dry plate clutch mounts direct on company's engines

Source: BRIGGS & STRATTON CORP.
2709-13 N. 13th St., Milwaukee 6, Wis.



For stop and go

New clutch provides for lever operated neutral and over-center power engagement positions for power take-off on the company's line of gasoline engines. It is available installed on Models 9FB, 14FB and 23FB assemblies. It mounts directly to the engine crankcase and supports the power take-off shaft in a double thrust ball bearing.

Lubrication is not required beyond occasional greasing of the bronze throw-out bearing. It is accessible through a greasing porthole. Overall height, including the 2¼ in. shaft extension, is 8⅝ inches. The operating lever stands 12 in. above the shaft center line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1778

NYLINED* BEARINGS

... with Smooth, Tough, Du Pont NYLON

Solve Many Bearing Problems

- Resiliency resists poundout
- Permit dry operation
- Minimize abrasion failures
- Silent operation
- Lower friction
- Superior corrosion resistance
- Damp mechanical vibration
- Eliminate friction oxidation
- Operate in liquids
- Close fits
- Non-contaminating
- Extremely compact
- Light weight
- Low cost
- Longer life
- Less maintenance
- Bearing surface instantly replaceable

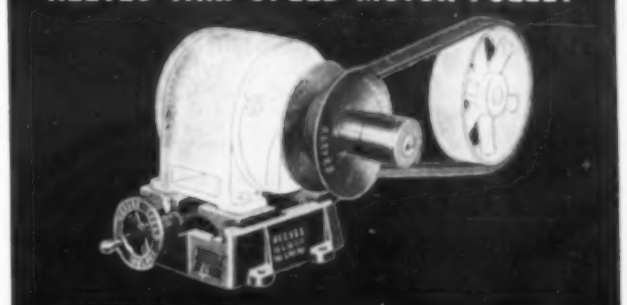
* For further information and the name of your local representative, write

THOMSON INDUSTRIES, Inc.
Dept. 8
Manhasset, New York

Also Manufacturers of BALL BUSHINGS . . . the Ball Bearing for Linear Motions

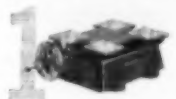
If you write maker identify as IEN - 1779

REEVES VARI-SPEED MOTOR PULLEY



CONVERTS ANY CONSTANT SPEED MOTOR TO A "STEPLESS" VARIABLE SPEED DRIVE!

For Stepless Speed Adjustability Within 4:1 Range. Sizes to 10 Horsepower



1 Mount Your Motor on This REEVES Motor Base. Base includes sliding platform and handwheel for moving motor forward or back.

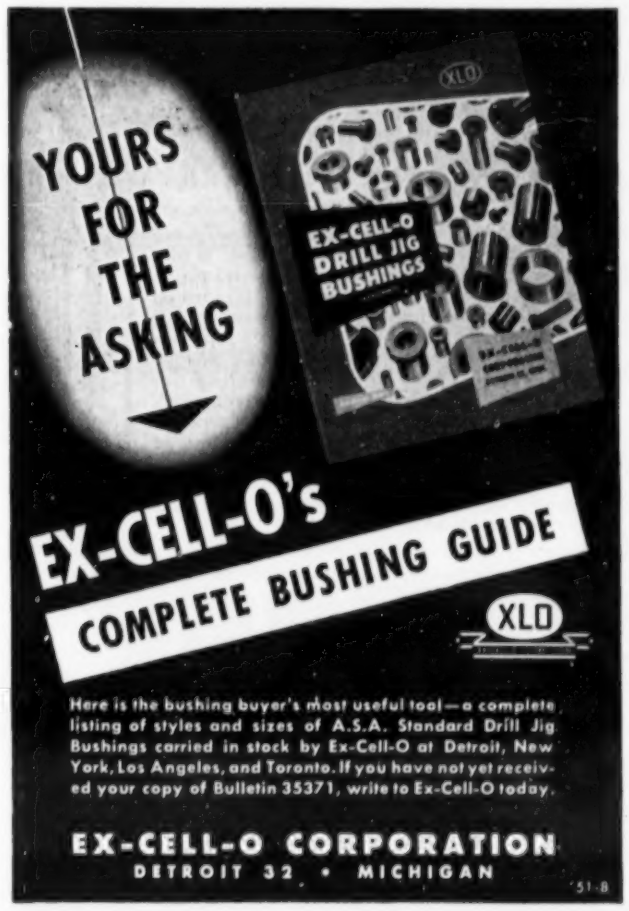
2 Apply This Disc Assembly to Motor Shaft. Consists of two cone-shaped discs, one sliding laterally, and compression spring.

3 Connect to Driven Machine with REEVES V-Belt. Place V-belt between discs and over pulley on power input of driven machine.

For complete details, send for **FREE** *Catalog IN 11c-G*

REEVES PULLEY COMPANY · COLUMBUS, INDIANA
Recognized Leader in the Specialized Field of Speed Control Engineering

If you write maker identify as IEN - 1780



If you write maker identify as IEN - 1781

Here's a new lightweight cutter, built to cut flat steel strapping easily, quickly and safely.

It's Acme Steel's new E14AO Strap Cutter. It weighs just one pound and it's only 9½ inches long—but it cuts steel strapping up to ¾ inch. Won't dig into carton or bale. Built-in band guide keeps strap from turning on edge or wedging between blades.

If your receiving room gets strapped packages—and who doesn't?—you need this new cutter. Call the Acme Steel service office nearest you, or write Acme Steel Products Division, Dept. IEN-23.

ACME STEEL COMPANY
2840 Archer Avenue, Chicago 8, Illinois

If you write maker identify as IEN - 1782

FOR *Strictly* IMPERSONAL INSPECTION CHOOSE AMES DIAL COMPARATORS

Ames Dial Comparators make the inspection of duplicate parts an extremely simple, rapid and accurate operation. Ames Comparators are strictly impersonal in their accuracy – the results being in no way dependent on the skill or judgment of the operator. The pressure of the gauging members against the work is mechanically determined and therefore uniform.

Check the Ames Dial Comparators shown – one of them may solve a Quality Control problem for you.

Ames No. 1 is an easily adjustable bench model dial comparator that measures objects up to 2" in cross section. This comparator is designated *Ames No. 1W* when equipped with a dead-weight and contact to ASTM specifications for measuring resilient materials.

Ames No. 2 is a compact bench model dial comparator for measuring sheet metal, glass, hard rubber. *Ames No. 2W* is similar, but is furnished with dead-weights and contacts to ASTM specifications for checking textiles, plastics, sheet rubber, etc.

Ames No. 13 features flat-ground, cast-iron base of ample size for using V-blocks and locating fixtures. The No. 13 can be fitted with a fine adjustment for close setting. Adjustable bracket holds any Ames Indicator.

Ames No. 130 is designed especially for inspecting comparatively large and odd-shaped parts. For this reason, the flat-ground steel base, the adjustable indicator support, and the upright column are proportioned to the user's requirements.

Send us your Quality Control job specifications, and we will supply complete details and proposal without obligation.

Representatives in principal cities **B. C. AMES CO.** *34 Ames Street Waltham 54, Mass.*

• Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

If you write maker identify as IEN - 1783

NEED "*Special*" CHAIN HOISTS?

Call on CHESTER

In addition to a complete line of Spur-Geared and Differential Chain Hoists, Chester is in a position to move fast on orders for special types.

For example, we can furnish Low Headroom Trolley Hoists for buildings where no other type of hoist can be used. We can also adapt our standard Spur-Geared Hoists to the Extended Hand Wheel Type—ideal for handling hot materials from a safe distance, for moving work whose surface must be protected against scratching by the hand chain, or for large flat or bulky loads.

Why not ask your distributor, or write us today, for the Chester catalog, and tell us your "special" problems?

Extended Hand Wheel Type

Low Headroom Trolley Hoist

CHESTER HOIST DIVISION
The National Screw & Mfg. Co.
Lisbon, Ohio

If you write maker identify as IEN - 1784

SOLVE YOUR ROTARY SEALING PROBLEMS with FAWICK ROTORSEALS

Machine problems requiring transmission of air or liquids from stationary to rotating machine members are best solved with FAWICK ROTORSEALS.

Precision ROTORSEALS are available in single and multiple passage units, insuring dependable sealing of air, liquids or gases under pressure. They are equally effective in vacuum applications and may be operated continuously or intermittently in either direction.

Write for ROTORSEAL Bulletin ML-6.

FAWICK AIRFLEX DIVISION
FEDERAL FAWICK CORPORATION
9919 CLINTON ROAD • CLEVELAND 11, OHIO

FAWICK Airflex

If you write maker identify as IEN - 1785

PRINTING . . Photocopy machine applies vacuum under rubber blanket

Source: PEERLESS PHOTO PRODUCTS INC.
652 Tesla Road, Shoreham, N. Y.

Eliminates rejects

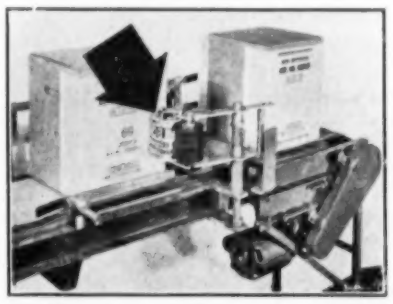
Large or small work sheets, written, printed, drawn, are held flat in even contact with sensitized paper by means of a rubber blanket and a built-in vacuum pump in this new Magic Hand machine. The blanket and a counter balanced light weight frame replace the company's previous design employing a much heavier hinged frame. The blanket provides rolling action as it comes to rest upon the work, this action squeezing out excess air for firm close contact.

Three sizes provide printing area that measures 38 by 50 in., 44 by 74 in., and 50 by 98 inches. Large or small work sheets can be distributed over the total area for exposure by instant starting fluorescent lamps and a new reflector that assures uniform illumination over the entire surface. Operation is on 110-volt 60-cycle ac. One or two paper storage drawers are included in the housing.

If you write maker identify as IEN - 1786

MARKING . . Roll type attachment to mark containers riding a conveyor

Source: PANNIER CORP.
101 Pannier Bldg., Pittsburgh 12, Pa.



Rolls and reverses

Master Marker is a new attachment for application on a belt or roller conveyor. It can be employed singly to mark either side or the top of a container. Multiple units can be assembled to mark the two sides and top simultaneously. Interchangeable holders in the attachment provide for changing container content. The printing roll covers marking area measuring 6 in. from left to right and 3½ in. from top to bottom. Rubber type are inked by an impregnated roll in which ink is fed from a reservoir type fountain.

Identify as IEN - 1787

No snow will remain on the sidewalk surrounding the John T. Ryan Memorial Laboratory of Mine Safety Appliances this winter. Reason will be the seventy-two Edwin L. Wiegand Company Thermwire heating elements that have been embedded in the concrete. Each is a 160-ft. length. Operating cost is estimated at $50 per season based on average Pittsburgh weather for the 1,400 sq. ft. of sidewalk.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1788

UNDER $2000

Automatic

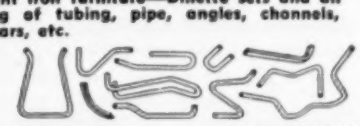
TUBE BENDER

BEND-EX AIR COMPRESSION TUBULAR BENDING MACHINE

Makes Over 900 bends an hour

Adaptable to All bending . . .

Wrought iron furniture—Dinette sets and all bending of tubing, pipe, angles, channels, solid bars, etc.



WRITE FOR FREE LITERATURE

- FURNITURE
- AIR CRAFT
- AIR CONDITIONING
- AUTOMOTIVE
- PLUMBING
- REFRIGERATION

PAUL MACHINE TOOL & DIE WORKS
4600 S. Kedzie Dept. IN
CHICAGO 32, ILLINOIS

If you write maker identify as IEN - 1789

ENAMELSTRIP

STEEL • ALUMINUM • BRASS • PRE-FINISHED COLOR COIL

assures a **perfect finish**

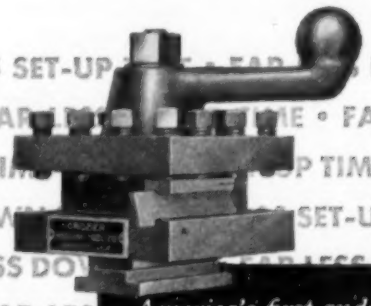
before fabricating

You can easily cut production time and cost with Enamelstrip, the continuous-feed, pre-colored metal coil. Leading manufacturers of metal products are using it with outstanding results in a wide variety of items. Enamelstrip's exclusive, flexible finish withstands the stresses of drawing, bending and forming without cracking or peeling. Many companies have entirely eliminated their finishing departments! Any metal in any finish will be coated and slit to your own specifications.

Write TODAY for detailed color bulletin.

THE COATED COIL CORPORATION
511 West 30th Street, New York 1 • LOngacre 5-3161

If you write maker identify as IEN - 1790



FAR LESS SET-UP • FAR LESS DOWN TIME • FAR LESS DOWN TIME • FAR LESS SET-UP TIME • FAR LESS DOWN TIME • FAR LESS SET-UP TIME • FAR LESS SET-UP

America's first and finest

CROZIER TOOL POST TURRET

now with 12 position indexing

12 position indexing now makes possible the alignment with work at any thirty degree increment.

This is only one of the outstanding features developed by the first and largest manufacturer of turrets for small lathes. Other features include built-in cut-off tool and holder and positive rapid indexing. All wearing parts are hardened and precision fit. They are available in three sizes.

Switch to Crozier Tool Post Turrets today. Save as much as 75% set-up and down time in lathe operations. In Crozier, you have America's precision-built tool post turret. Write for catalog.

CROZIER MACHINE TOOL CO. Dept IEN-2

Hawthorne, California

If you write maker identify as IEN - 1791

LESTO

THE ELECTRIC HAND SAW FOR *Every Job*

RIP
SCROLL
BAND
JIG
CROSSCUT
COPING
KEYHOLE

Cuts inside holes without drilling a starting hole

EXTREMELY FAST

for soft and hard wood, soft metal, bone, plastics, hard rubber, cement sheet, pressed wood, etc.

Cuts 2" Wood Beams

Write for Literature

Sold and Serviced in Principal Cities Throughout U.S.A.

VICTOR J. KRIEG, Inc.

Sole U. S. Representative for Scintilla, Ltd. Switzerland

51 West 52nd St., New York 19, N. Y. Eldorado 5-4030

Some Sales Territories Available

If you write maker identify as IEN - 1792

Continental CHASER AND CUT-OFF WHEEL GRINDER

Keeps tools sharp

One machine does both—it sharpens pipe thread chasers at one end — and pipe and tube cut-off wheels at the other end. Keeps your tools ready for instant use — always sharp. *Also, Manufacturers of Cut-off Machines and Wheels.*

Request Circular, Today.

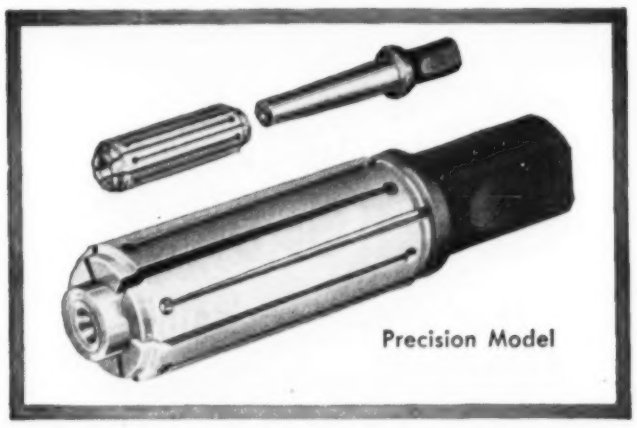
Continental MACHINE CO.
SINCE 1919
1952 N. MAUD AVE. • CHICAGO 14, ILL.

If you write maker identify as IEN - 1793

CHAMPION
E-X-P-A-N-D-I-N-G MANDRELS

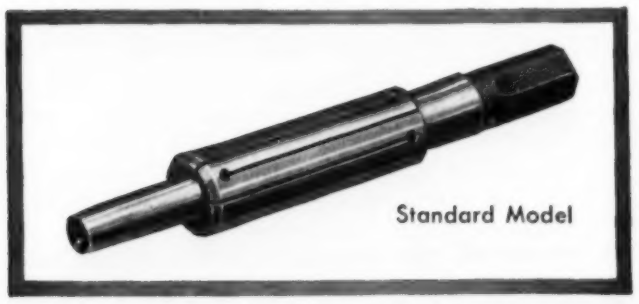
work savers—cost cutters job speeders—in any shop

Save the time spent tooling up solid mandrels. CHAMPION mandrels automatically expand to exact, positive, concentric fit as the flexible sleeve is moved along the tapered arbor. Work is quickly set up; easily taken down. Your production costs are cut, whether the job calls for machining only one piece or ten thousand pieces.



Precision Model

Precision Model positively guaranteed for precision grinding, turning and milling operations. Ideal where accuracy and time-saving are of utmost importance. Available in standard sizes from ½" through 3" diameter, graduated by 1/16". Arbor built for heavy loads. Sleeve has range of .010", from .003" under to .007" over nominal size. Positive stop at maximum size prevents overstrain. Holds tolerances of .0002" run out. Withstands hardest wear; permanent accuracy is assured.



Standard Model

Standard Model used throughout the world. Standard tool room equipment in all phases of modern industry. A set of twelve will completely and accurately fill any hole from ½" to 7" diameter—replace hundreds of solid mandrels costing many times as much. Show negligible wear after years of use. Maintain close tolerances; handle material of any length bore, hard or soft metals, from thin tubes and bushings to heavy castings and forgings.

CHAMPION Expanding Mandrels can be made in special shapes and sizes to fit any specification. Quotations on request.

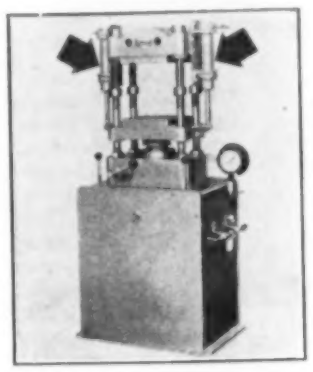
When writing, please address Dept. 200.

WESTERN TOOL & MFG. CO., INC.
SPRINGFIELD, OHIO

If you write maker identify as IEN - 1795

PRESS . . Pneumatic hydraulic unit connects to air line, 30 and 50 ton

Source: AMERICAN STEEL FOUNDRIES
1150-A Tennessee Ave., Cincinnati 39, Ohio



Ask for Bulletin 1036A

Pushback cylinders, for pneumatic operation, are now available for the company's pneumatic-hydraulic Hydrolair press, previously described IEN-1760-52. The cylinders apply on the two sides of the press with their piston rods facing downward to return the ram to open position when pressure is released from the main power cylinder.

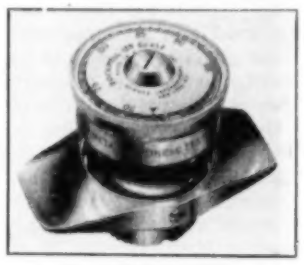
Their installation does not change normal operation of the press in which air pressure applies on liquid in a hydraulic cylinder in the base to move the ram up when a lever is operated. Reversing this lever diverts the air pressure to apply it through a built-in intensifier known as the Power-Petuator. This multiplies the line to cylinder pressure ratio to bring the press up to its rated pressure capacity.

Both 30 and 50-ton assemblies are included in the line, the former in a bench and a floor type. The 50-ton machine can be specified with pushbutton electric control for quick approach, change to high pressure for a desired interval, to be followed by quick retraction. Platen size measures 10 by 10 and 18 by 18 inches. Maximum opening is 13 and 14 inches.

If you write maker identify as IEN - 1796

TESTING . . Portable instrument reads material hardness on dial scale

Source: NEWAGE INTERNATIONAL INC.
235 E. 42nd St., 2nd Floor, New York 17, N. Y.



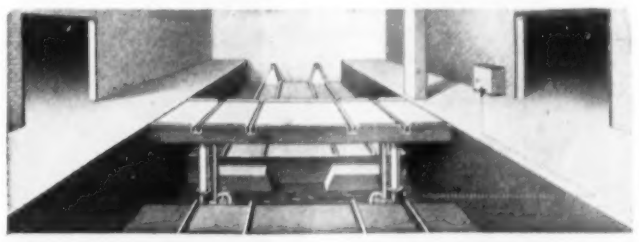
Now made in USA

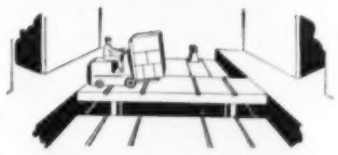
Capillary tube, made of glass, is formed into a circle to lie in a protected recess in the case surrounding the dial scale of this recently improved Ernst hardness tester. The tube connects to a chamber filled with a colored liquid in the housing of the instrument above a diaphragm that contacts a spring backed indenter. The spring rates 45½ pounds. It resists retraction of the indenter by this amount as the instrument is pressed against the surface of the material to be tested. Actual retraction moves liquid from the chamber into the tube to read hardness. Movement of the indenter into the work is magnified about 3,000 times by the capillary tube.

Indentation is maximum at 0.003 in. in depth and not more than 0.006 in. in diameter. Readings can be obtained on sheet metal as thin as 0.02 in. and on round bars larger than $\frac{3}{16}$ in. in diameter. Improved construction of the instrument, previously described IEN-324-51, adds a new scale for direct dial reading in Rockwell "15N". Grooves have been added to the base so the user can center the instrument on very small pieces without having to "feel" for position. Overall instrument dimensions are 2½ in. in diameter by 3 in. in height. Weight is 30 ounces.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1797





Take the short cut across spur tracks

WITH AN OILDRAULIC TRANSFER BRIDGE

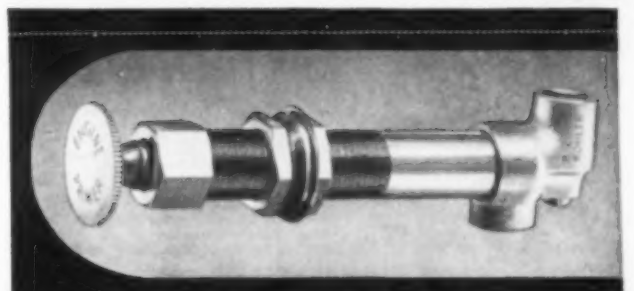
■ This new hydraulic bridge is the most effective way to "bridge the gap" between plant areas split by railroad tracks. It permits plant traffic to flow on a straight line without congestion and time-consuming detours. Operated by dependable, economical Oildraulic power unit with push-button control. When platform is lowered, the rails on the Oildraulic Transfer Bridge fit into permanent trackage for rail traffic. Ruggedly designed to carry heavily-loaded power trucks—capacities up to 100,000 lbs. as required. For complete data, write:

ROTARY LIFT CO., 1069 KENTUCKY, MEMPHIS 2, TENN.

World's largest builder of hydraulic lifts.

Rotary®
Oildraulic Transfer Bridge

If you write maker identify as IEN - 1798



Kohler Engine Primer—specified by manufacturers of Diesel engines and personal airplanes for efficient, reliable priming.

KOHLER PRECISION CONTROLS

Aircraft · Industrial · Automotive

Kohler Co. is a leading supplier of precision controls to manufacturers of jet engines, military, commercial and private aircraft, agricultural and industrial test equipment, Diesel engines, automobiles, trucks, and tractors.

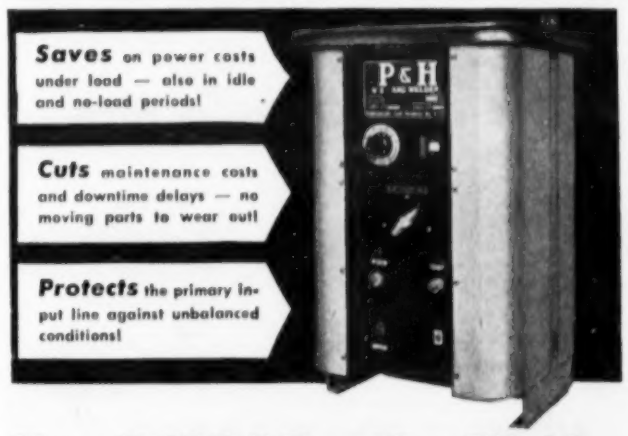
Our engineers develop, for volume production, valves, fittings and kindred equipment to specification. Write for catalog.

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

If you write maker identify as IEN - 1799



New P&H DC Rectifier Welder
— *with Dial-lectric Control*

Gives you economy, quiet operation, balanced-line loading, and instantaneous remote control.

You get low-cost DC welding current without a generator, from this new P&H DC Rectifier Welder — industrial twin to the famous P&H AC Dial-lectric Welder. Two sizes: 200 and 300 Amps at 40V.

No troublesome mechanical devices to control amperage—simply turn a single radio-type knob. This and other P&H extra-value features help you realize savings on power consumption and maintenance.

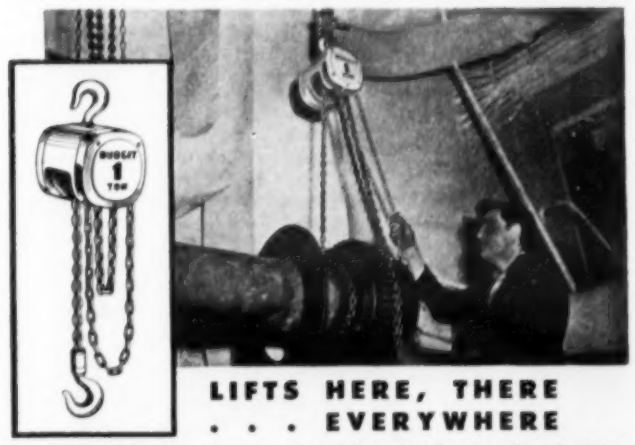
Ask your P&H representative or distributor for further information. Or write direct.

P&H WELDING DIVISION
HARNISCHFEGER CORPORATION
4520 WEST NATIONAL AVENUE
MILWAUKEE 46, WISCONSIN

Power Shovels • Crawler and Truck Cranes • Overhead Cranes • Hoists • Arc Welders and Electrodes • Soil Stabilizers • Diesel Engines • Pre-Fabricated Homes

24928

If you write maker identify as IEN - 1800



LIFTS HERE, THERE . . . EVERYWHERE

Light weight, ruggedness, and speed make the portable 'Budgit' Aluminum Chain Block tops for every imaginable spot-lifting job. It's a one-man hoist — easy to carry, hang up, and use anywhere. The ¼-ton size weighs a mere 29 lbs. A pull of only 25 pounds on the hand chain lifts the full load!

For on-the-spot hoisting service unmatched by any other chain block — choose 'Budgit.' For design, engineering, and construction features backed by over 60 years of experience in building load-handling equipment exclusively — 'Budgit' is the chain block to buy. It's available in ¼, ½, 1, and 2-ton capacities. Bulletin 398 gives full details about this powerful hoist. Write for a copy.

MANNING MAXWELL & MOORE MMM

'Budgit'® CHAIN BLOCKS

MANNING, MAXWELL & MOORE, INC.
Muskegon, Michigan

Builders of "Shaw-Box" Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, 'American' Industrial Instruments.

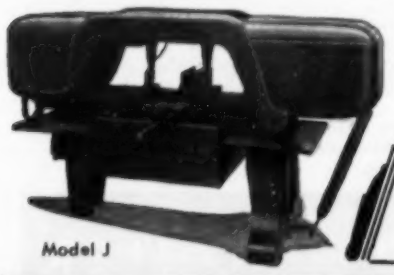
If you write maker identify as IEN - 1801

EXTRA SPEED..!

Save time, eliminate production slow-up and reduce labor costs by using this highly efficient metal cut-off band saw. It has extra speed through its extreme rigidity and saw support, allowing more feet per minute in saw travel. The set-up is quick, the cutting action continuous. It's accurate, insuring square true cuts. Operates and shuts off automatically. Model J, 10" x 18" capacity.

Also JUNIOR MODEL B, 5" x 10" capacity.

JOHNSON METAL CUT-OFF BAND SAW



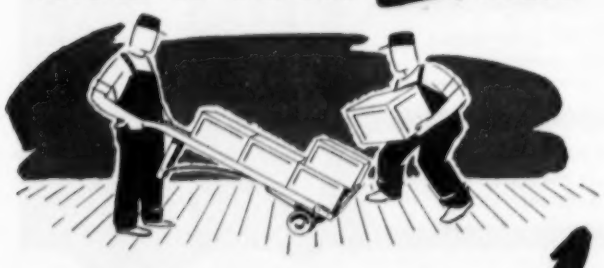
Model J

Write for CATALOG!

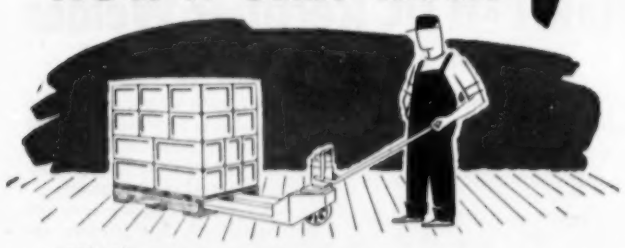
JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN - 1802

ONCE IT TOOK 2 MEN



NOW IT ONLY TAKES 1



with the

RAYMOND

Hydraulic PALLET LIFT TRUCK

MODEL L4P

One man handles 3-ton loads with ease using this RAYMOND Hydraulic Pallet Lift Truck! Why — because hydraulic power, not the operator, does the lifting. A few pumps of the handle and even heaviest loads are ready for hauling.

RAYMOND Pallet Trucks help out on short hauls and during peak periods—release your power trucks for long hauls and tiering.

These rugged trucks are highly maneuverable, feature fingertip lowering, come in 4,000 or 6,000 lb. capacities. Available also in Lightweight 2,000-lb. capacity model.

MODEL EL4F

FAST MOVER!

That's this RAYMOND Low-Lift Rider-Type Electric Truck. It travels up to 6 mph empty and 5 mph loaded — speeds up long hauls, stock picking, loading, unloading. Capacity: 4,000 lbs.

SEND TODAY

The RAYMOND CORPORATION
Formerly LYON-Raymond Corporation
3578 Madison St., Greene, N.Y.

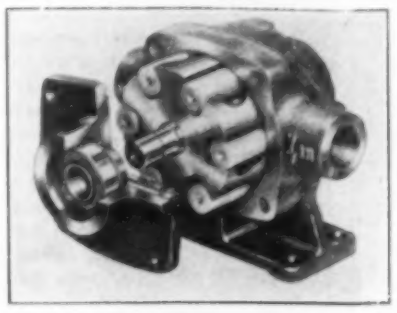
Gentlemen: Please send me Bulletin 207, describing your complete line of Hydraulic Lift Trucks. Also Bulletin 750, showing your new Low-Lift Electric Truck.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN - 1804

PUMP . . Rotary design carries nylon rollers in radial slots

Source: HYPRO ENGINEERING INC.
402-6 N. Washington Ave., Minneapolis 1, Minn.



For corrosive fluids

The company announces a new Series-6000 pump in its new nylon roller design, previously described IEN-8333-52. The new pump will handle wettable powder mixtures as well as emulsified solutions. It is recommended for spraying and transfer work, provides self-priming action. It rates 12.5 gpm. on free delivery at 800 rpm. It can be employed at pressures to 200 pounds.

Construction includes ¾-in. pipe connections in the Ni-Resist housing. The rotor is made of the same material and carries the resilient nylon rollers. The stainless steel shaft is mounted on permanently lubricated sealed ball bearings for continuous operation. Installation can be made for belt, pulley or direct drive. Pump weight is 10½ pounds.

If you write maker identify as IEN - 1805

HANDLING . . Rubber-plastic tray designed and built for specified work

Source: JERED ENGINEERING & MFG. CO.
19802 W. 8-Mile Road, Detroit 35, Mich.

Ask for Bulletin SP-500

Royalite or Boltaron are the two thermoplastic materials employed in fabrication of materials handling trays for specific operations. Each tray is designed and manufactured to meet given requirements as to work, shape, size, quantity and weight. A variety of colors can be employed to assist in identification through production and inventory operations. The material is light in weight and proof against attack by grease, mildew, vermin. It is stain proof, shatter proof, tough and shock resistant to withstand handling.

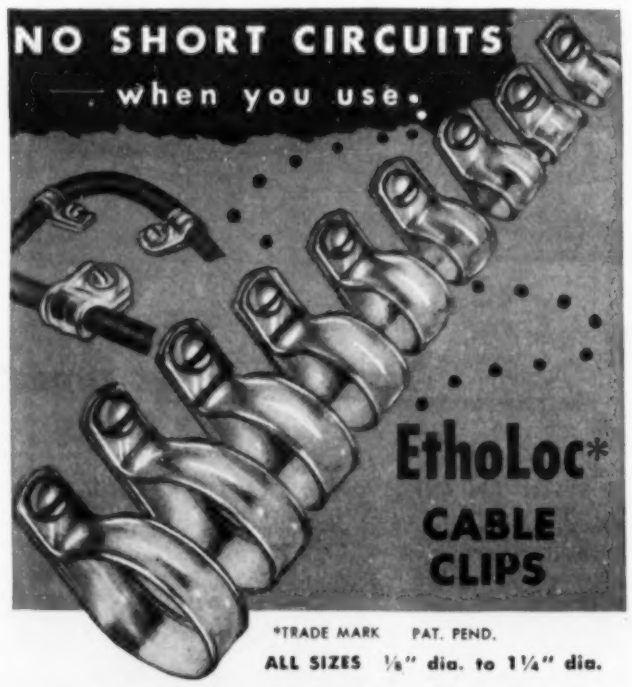
Identify as IEN - 1806

Sno-Gel trade names a remarkable new refrigerant. It also is the company name of its national vendor. The material is a mixture of water and chemicals to produce a gelatin-like substance holding the water in colloidal suspension. It is packed in various forms and sizes depending on the purpose for which it is to be used.

Each form is refrigerated by suitable equipment and then becomes the refrigerant to replace or supplement regular ice, dry ice. It absorbs heat but gives off no water as it thaws. It can be frozen and used again many times. Temperature range is from minus 8 to plus 32 deg. F.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1807



*TRADE MARK PAT. PEND.
ALL SIZES ⅛" dia. to 1¼" dia.

Made of TOUGH, DURABLE ETHYL CELLULOSE PLASTIC—FLEXIBLE, EASY TO INSTALL

Write for Sample and Full Information, including Strength Tests and Prices

ALSO MFRS. OF ALL NYLON CABLE CLIPS

WECKESSER COMPANY
5261 N. Avondale Ave. • Chicago 30, Ill. • Dept. L

If you write maker identify as IEN - 1808

Yes! THRIFTMASTER makes *ALL TYPES* of DRILLHEADS

Universal Joint Drillhead . . . Full Ball or Bronze Bearing Construction Standard and Heavy Duty. From ½" Minimum Centers up. Capacities to 1" in Steel.

Gear Driven Electric Type Adjustable Drill Head . . . Enclosed, Full Ball Bearing Construction.

Special Fixed Center Drillhead . . . Full Ball Bearing Construction.

- **We Stock or Can Build the Right Drillhead for Your Job.**
- **Write for THRIFTMASTER Complete catalog or phone for a rush, on-the-spot, quote.**

Subsidiary of Thomson Industries, Inc.

THRIFTMASTER *Products Corporation*
1040 N. Plum Street LANCASTER, PENNA.

Also makers of
DORMAN AUTOMATIC REVERSE TAPPERS

If you write maker identify as IEN - 1809

How Norton brings *you* the "TOUCH OF GOLD" that adds *more* value to *every* grinding job

Grinding, the most universal, most basic of all production processes, is the true "Touch of Gold" that increases the usefulness — and the value — of every manufactured article. That's what happens every time Norton grinding wheels touch the grinding jobs *you* do.

Here is how Norton leads the field in producing and improving the "Touch of Gold" for all industry.

FIRST IN SIZE. The Norton Worcester plant is the world's greatest single source of abrasive products.

FIRST IN RESEARCH. More new abrasives, bonds and processing techniques have originated in Norton laboratories than anywhere else. Norton leads in product-application "know-how", too.

FIRST IN PRODUCT-RANGE. Norton offers you the most complete line — the widest selection of wheels to meet your grinding needs.

FIRST IN SERVICE. Your Norton Abrasive Engineer will help you find the money-making answers to your grinding problems. And your Norton Distributor is your direct connecting link with the entire Norton organization — world headquarters for your "Touch of Gold." NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities. *Export:* Norton Behr-Manning Overseas Incorporated, Worcester 6, Mass.

NORTON ABRASIVES

Making better products to make other products better

If you write maker identify as IEN - 1811

Standard . . . or Special

• You can depend on Albion Industries to meet your most *exacting* requirements for rugged, dependable industrial casters . . . in dozens or thousands.

Albion produces better, yet more economical casters for every conceivable industrial operation. Investigate their advantages today . . . make Albion your *one dependable source* for casters and wheels.

ALBION INDUSTRIES, Inc.
Albion, Michigan

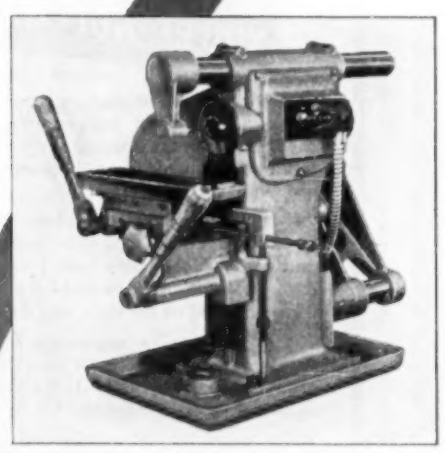
If you write maker identify as IEN - 1812

Why tie-up BIG INVESTMENT MILLING MACHINES

with work that can be done quicker and easier on

BURKE BENCH MILLERS

It is amazing how much miscellaneous and production milling can be shifted from large millers to rugged, accurate, economical Burke Bench Millers.



Complete data on hand-feed, power-feed and universal models and attachments sent on request.

Thousands now at work in production lines and tool, repair, development and school shops.

The Burke Machine Tool Co.
A Division of the
U.S.-BURKE MACHINE TOOL CO.
BROTHERTON ROAD 5
CINCINNATI 27, OHIO

If you write maker identify as IEN - 1814

DISPENSING . . Glue container feeds by gravity to applicator roll

Source: FIBLECO ILLINOIS CORP.
4630-44 N. Clifton Ave., Chicago 40, Ill.

For a clean even glue line

The 10-in. metal body of this new dispenser holds about 1/6 gal. of waterproof glue, sufficient for about 1,000 ft. of glue line. Feed is by gravity to a knurled free turning metal applicator roll measuring ¾ in. in width. The user rolls the dispenser along a work surface to apply an even spread of glue. When he is not using the unit he places it in a stand that holds it at an upward facing angle as shown in the illustration. List price with stand is $52.50.

If you write maker identify as IEN - 1815

LUBRICATING . . Synthetic liquids safe for compressors handling gas

Source: CARBIDE & CARBON CHEMICALS CO.
30 E. 42nd St., Room 1213, New York 17, N. Y.

Viscosity range
50 to 90,000 ssu.

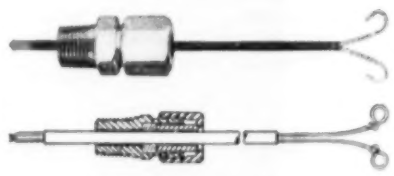
New line of sulfur-free lubricants have been added to the company's Ucon synthetic line for safe application in compressors handling hydrogen, nitrogen, hydrocarbons, air and other gases containing sulfur sensitive catalysts. The new lubricants will not poison these catalysts. At the same time they are resistant to formation of varnish, sludge, carbon.

Water soluble and insoluble types are available. The former can be removed from compressed gases by water washing. The lubricant is wax-free, non-toxic and non-corrosive.

If you write maker identify as IEN - 1816

SEALING . . Packing gland seals entry for a tube, rod, wire

Source: CONAX CORP.
4513-17 Main St., Buffalo 21, N. Y.



List is $1.75

Model MPG is a new stainless steel packing gland to seal an entry point for a small dial type thermometer, thermocouple weld, pitot tube, static pressure probe, round wire or an insulated electric conductor. It is made of Type-303 stainless bar stock and includes the body, the cap and a gland follower. The threaded connection is standard ⅛-in. pipe thread. Neoprene is the standard sealing material. Asbestos graphite can be specified for use with sliding or rotating rods or tubes. Three bore sizes are 3/32, ⅛ and $\frac{3}{16}$ inch. Overall length is 1⅛ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1817

RUBBER ENGINEERING BRAINS

Primarily, ACUSHNET sells rubber engineering "brains"—specialized, collective engineering skill that produces the solution to problem jobs constantly confronting users of precision molded rubber parts.

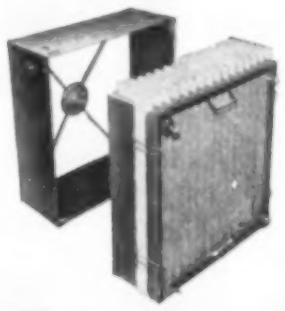
ACUSHNET accomplishments in this specialized field of precision production are widely recognized throughout industry. Our engineers will gladly study your prints and recommend stocks with properties to meet specified conditions or work with you in the initial stages of your designs.

Acushnet PROCESS COMPANY

Send for your copy of the Acushnet Rubber Handbook.

Address correspondence to 760 Belleville Ave., New Bedford, Mass.

If you write maker identify as IEN - 1818



Electro·PL

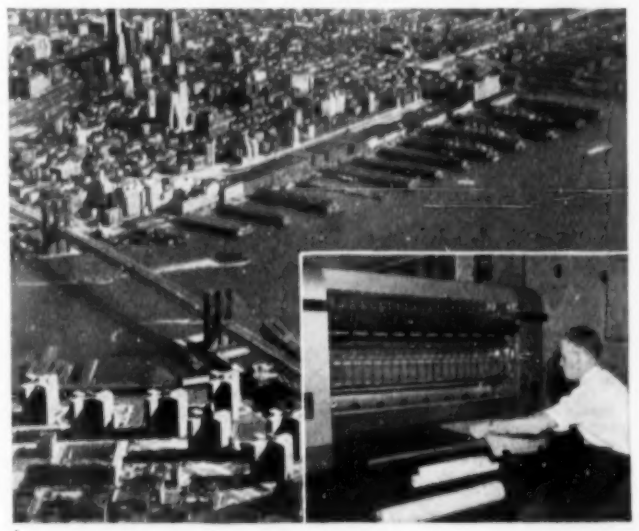
dual-purpose electronic air filters

This dry-type electronic filter gives intermediate air cleaning efficiency with maximum economy. Its charged Airmat media has twice the efficiency of uncharged dry filters. Unique dual-purpose feature allows operation either as dry-type air filter or electronic precipitator, as seasonal conditions vary. Available in standard units for straight or "V" bank arrangements. Write for Engineering Bulletin No. 257.

A single source for all air cleaning equipment.

AAF American Air Filter
COMPANY, INC.
335 Central Avenue, Louisville 8, Ky.
American Air Filter of Canada, Ltd., Montreal, P. Q.
Pacific Division Office, San Francisco, Cal.

If you write maker identify as IEN - 1819



BROOKLYN was "unprintable"

Recently, The Consolidated Edison Company (in New York City) faced this problem: It had to produce a direct-process print from each one of more than ten thousand Brooklyn Underground Record Maps, showing the distribution system of electric service.

But satisfactory prints could not be produced directly from these maps. They were up to 30 years old . . . had been referred to constantly . . . and as a result were soiled, stained, creased, and "dog-eared."

What to do? Retracing was out of the question, since it would take a draftsman from two to three days to trace and check just one of these 17" x 25" drawings.

Kodagraph Autopositive Paper was the speedy, economical solution

With this revolutionary photographic intermediate paper, approximately 40 sharp and clean "duplicate originals" could be turned out in an hour. *Yes, 40 in an hour because* Kodagraph Autopositive Paper produces positive copies directly—without a negative step, without darkroom handling. At the same time, it drops out stains, creases . . . cleans up backgrounds . . . transforms weak detail into dense photographic black lines. Furthermore, Autopositive Paper can be exposed in standard print-making equipment . . . and processed in standard photographic solutions.

Thus, *Consolidated Edison did the job in record time and at minimum cost.*

Learn all the ways you can save with Kodagraph Autopositive Paper—the revolutionary photographic intermediate material which you, or your local blueprinter, can process at low cost. *Write to . . .*

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak
TRADE MARK

If you write maker identify as IEN - 1821

Small precision metal parts... Torrington makes them better, and for less!

FREE CATALOG — shows the great variety of small parts we can produce inexpensively and promptly. Send for copy today!

If your product uses small precision metal parts . . . pivots, pins, dowels, rollers, mandrels, needles, punches, etc. . . . send us your blueprints for a prompt quotation.

As a leading contract fabricator, TORRINGTON is equipped with the special machinery to produce in any quantity for quick delivery at low prices.

THE TORRINGTON COMPANY
Specialties Division
360 Field Street • Torrington, Conn.

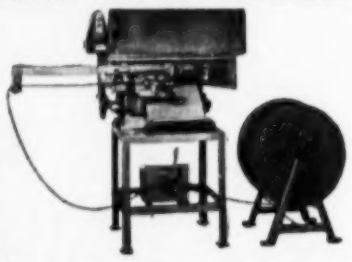
Makers of
TORRINGTON NEEDLE BEARINGS

If you write maker identify as IEN - 1822

Measure, Cut and Strip Insulated Wire

IN ONE SPEEDY OPERATION

ON ARTOS *Automatic* MACHINES



Does your production require cutting and stripping of insulated electric wire, cord, cable, etc.?

You can produce finished leads *much faster* . . . as many as 3000 per hour in 15-in. lengths . . . on this Artos Automatic Machine. Substantial time savings are obtained over the best manual or semi-automatic methods.

Operation is fully automatic—wire is taken from the reel, measured, cut to length and stripped at one or both ends. Unskilled help can handle the machine. Set-up is easy for different wire types and lengths.

MODEL CS-6E CAPACITY

FINISHED PIECES PER HOUR—From 3000 per hour up to 15 in. lengths to 500 per hour in 64-97 in. lengths.
MAXIMUM STRIPPING LENGTH—1½ in. at each end (greater stripped lengths are special).
MAXIMUM CUTTING LENGTH—97 in.
MINIMUM CUTTING LENGTH—2 in. (also as short as ⅞ in. under certain conditions).
TYPES OF WIRE HANDLED—Solid or stranded single conductor wires, parallel cord, heater cord, service cord, etc.
MAXIMUM WIRE SIZE—No. 10 stranded or No. 12 solid.

Other Artos Machines

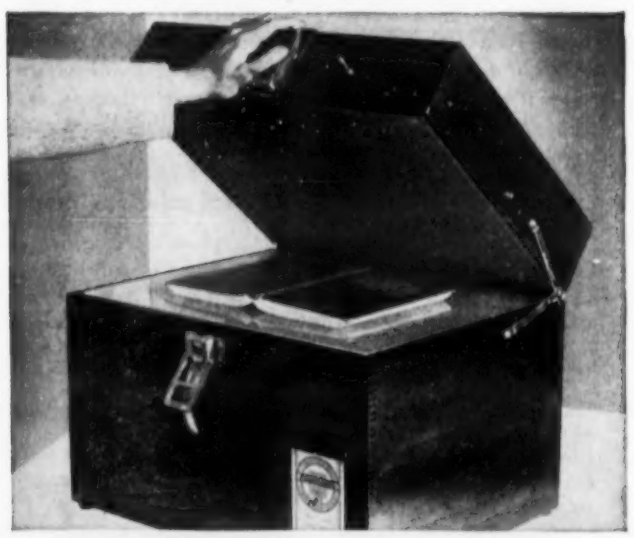
The complete line of Artos automatic wire cutting and stripping machines will handle *cut lengths* from 1 in. to 60 ft., *stripped lengths* to 6½ in. at one end and 8½ in. at the other, *wire* from No. 12 to No. 000 gauge, and up to 3600 pieces per hour. Ask for recommendations on your problems.

WRITE FOR BULLETIN

Get the complete story—write for Bulletin 35-C on Artos Model CS-6 machines.

Automatic Wire Cutting and Stripping
ARTOS ENGINEERING CO.
2749 S. 28th St. • Milwaukee 46, Wis.

If you write maker identify as IEN - 1823



New Peerless Photocopy Printer with "Pneumatic Cushion"

Makes Books, Records and other Thick Material Easy to Copy

PEERLESS

Write for free brochure and full particulars

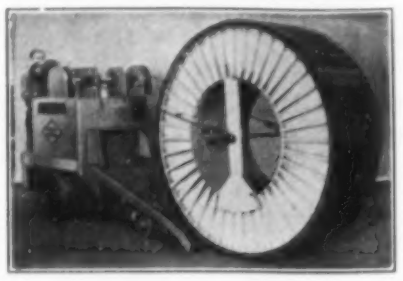
PEERLESS PHOTO PRODUCTS, INC., SHOREHAM, L. I., N. Y.

Distributors in: Los Angeles, Chicago, Cleveland, Detroit, Pittsburgh, Buffalo, Tulsa, Dallas, Houston, Salt Lake City, Atlanta

If you write maker identify as IEN - 1824

TRUCK . . Electric platform design with winch to handle heavy reels

Source: ELWELL-PARKER ELECTRIC CO.
4060 St. Clair Ave., Cleveland 3, Ohio



Loads to 10 ton

Reels measuring to 96 in. in diameter can be handled by this new tilting-platform winch-equipped truck. The motor driving the winch is connected to a shaft carrying a pair of drums so two wire pulling ropes, equipped with hooks, can be extended to the front. These are hooked to a bar, leading through the center of a reel, to roll it on the tilting platform when the motor circuit is closed.

A horizontal bar opens the motor circuit when the reel reaches the rear of the platform. The platform remains at a slight tilt in carrying position so the reel will roll from it by gravity when the ropes are released.

The truck is available with power or hand wheel steering. Platform size and wheel base are subject to specification. Steering is on all four wheels. Power can be supplied by a battery or an engine driven generator.

If you write maker identify as IEN - 1825

FURNITURE . . Steel stand to handle tools or work at a machine

Source: INDUSTRIAL BENCH & EQUIPMENT MFG. CO.
95-99 South St., New Britain, Conn.

Shipped knocked down

Flanged trays are secured in pairs of front and back legs made by notching and forming angle iron to make up this new steel stand. The leg angle runs from front to back across the top of the stand to add rigidity and attractive finish to the construction. A 2-in. flange along the side and back is supplemented by the formed top shelf. Forward edges are turned down. Gussets are welded in the corners to act as both supports and stiffeners. Corners and edges are smooth.

The stand is available in eight styles, plain or with drawers, casters and two or three trays. Height is 32 inches. A drawer measures 18 by 16 by 5 inches. Tray is 16 by 26 inches.

Identify as IEN - 1826

General understanding of a car puller in a plant yard is a small winch-like unit to move one or, at most, two cars a short distance on a straight track siding. Actually you can purchase a puller for permanent installation that will move as many as 25 cars on a straight or curved track for distances to a quarter mile. Stephens-Adamson Manufacturing Company installed such a puller in the yard of a chemical plant. It rates 10,000 lb. and drives a wire rope in a continuous closed loop to which the cars are hitched as required.

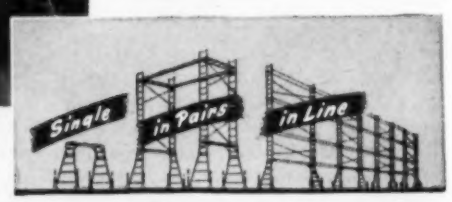
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1827

only the BIL-JAX

Maintenance TRESTLE gives you such VERSATILITY!

Gets your men up to any working level quickly, safely! Adaptable to any job, inside or out! Bridges obstacles, adjusts to uneven floors or stairways. Locking casters. Patented. U. L. approved. Designed especially for painting and maintenance work . . . its uses are unlimited.



Other Bil-Jax profit-makers include tower scaffolding, swing scaffolds, sidewalk bridges, ladder jacks, steel ladders . . . all of simple, sturdy design to give a lifetime of service, safety and satisfaction. Rent or buy. Distributors in principal cities.

Write for complete catalog. Address Dept. L-2

BIL-JAX, INC., Archbold, Ohio, U. S. A.

If you write maker identify as IEN - 1828

New! Low-Cost! - Wide-Range! VARIABLE Speed Sheaves Easily Attached to Any Machine

1/15 TO 15 HP.
RATIOS UP TO 8:1

● Simple, sturdy Speed Selector Sheaves are applied to any machine in only a few minutes . . . giving you wide-range speed control at extremely low cost. You get wide speed variations with standard V-belts, since two variable pitch sheaves are used. Eliminates bulky sliding motor bases, movable jackshafts and wide, high-cost special V-belts.

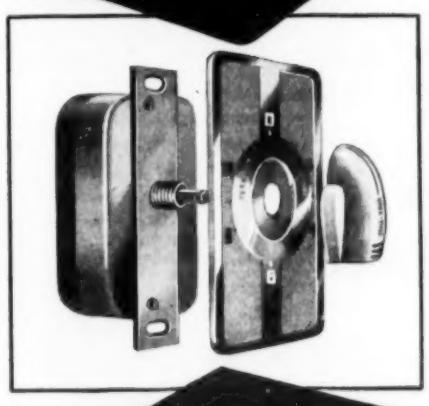
- Standard V-belts
- Automatic belt alignment
- Fixed shaft centers
- LOW COST

Write FOR FREE BULLETIN

SPEED SELECTOR INC.
118-A Noble Court • Cleveland 13, Ohio

If you write maker identify as IEN - 1829

MARK-TIME "9000" Wall Time Switch



turns current off or on WHEN YOU'RE NOT THERE!

This Mark-Time switch is a good deal more than a great convenience . . . it saves you money! Because it remembers to turn the current off or on when you're not there to do it!

"9000" automatically controls circuits of store window lights, neon signs, hall and garage lights, attic fans, farm lighting systems . . . dependably turning them on or off at the time you set.

"9000" is easily mounted in any standard rectangular wall box. Movements only available for home or industrial heating controls.

Write today for full details and prices.

SPECIFICATIONS

Time ranges from 3 minutes to 12 hours.
Rated at 20 ampere, 125 volt, 1 HP or 10 ampere, 250 volt operation, AC only. Available for either ON or OFF type operation. Hold feature also available — at HOLD position, current is ON, but timing mechanism does not operate until knob is turned from HOLD to a time period.

MARK-TIME
M. H. RHODES, INC.
HARTFORD, CONNECTICUT

Manufactured and sold in Canada by
SPERRY GYROSCOPE OTTAWA, Limited
3 Hamilton St., Ottawa, Ontario, Canada

If you write maker identify as IEN - 1831

UNIFLOW

INDUSTRIAL WATER

CONDITIONING EQUIPMENT

WRITE FOR BULLETIN 552

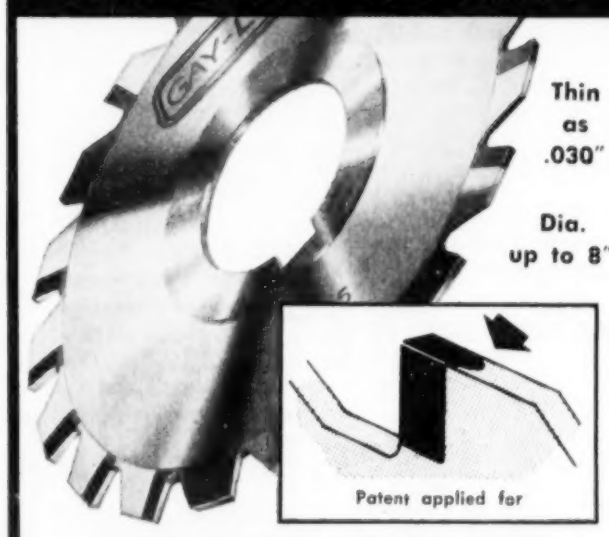
UNIFLOW MANUFACTURING CO.
1512 East Lake Road
ERIE, PENNA.

If you write maker identify as IEN - 1832

CARBIDE TIPPED

THINSAW

FOR EVERY INDUSTRY



CIRCULAR SEAT GIVES GREATER BRAZE AREA—BETTER TIP SUPPORT

This exclusive Gay-Lee carbide tipped saw design has completely changed the slitting, slotting and sawing picture. Now carbide tips stay in and run-out is eliminated. You get the full benefit of carbide's faster cutting ability.

WHAT IS YOUR SAW PROBLEM?

We are specialists in carbide saw design and manufacture. We have solved some tough jobs and some big ones. Can we help you?

Hub Saw — Thinsaw — Small Saw

Carbide teeth profile ground on Special Order

WRITE FOR DATA

GAY-LEE COMPANY
CLAWSON • MICHIGAN

If you write maker identify as IEN - 1834

DUST COLLECTING . . Electrostatic unit recovers coolant mist at a machine

Source: WESTINGHOUSE ELECTRIC CORP.
202 Readville St., Dept. T-509, Boston 36, Mass.

Keeps the air clean

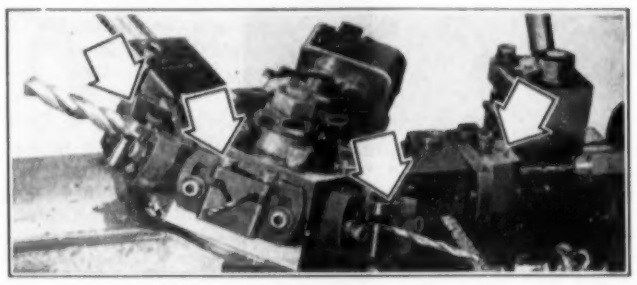
Coolant oil, in the form of mist, is recovered as it issues from a machine, employed in high speed cutting, grinding, milling, by this new design of the company's Precipitron electrostatic equipment. An installation assures clean air surrounding the machine as well as a saving represented by the recovered oil. Smoke generated by the high speed operations is also removed from the air.

Two models, Type PO-6 and Type PO-12, have air handling capacities of 600 and 1,200 cfm. East is equipped with a motor driven blower to draw in the dust, smoke and mist laden air. Foreign particles in the air are changed and collected by the electrostatic action. The oil drains down to a sump. Smallest of the two units measures 22 by 24 by 55 in. and weighs 265 pounds. The large one measures 31 by 27 by 63 in. and weighs 390 pounds.

If you write maker identify as IEN - 1835

LATHE TOOLS . . Adjustable holder for drills, counterbores, reamers

Source: BROOKFIELD INC.
753-57 Boylston St., Boston 16, Mass.



To center and hold tools or work

Model DB is a new design of the company's adjustable holder, previously described IEN-7940-52. It supplements the original Model DA. It will grip tool shanks between 1/64 and ½ in. in diameter. A companion Model GA will hold tool shanks from $\frac{1}{16}$ to ¾ inch. The tool is held in a vise like grip by V-jaws which, in turn, are clamped in place in the holder body so they can be moved to "float" a tool into center position or off-set it as required.

The holder is made of hardened steel with critical surfaces ground so run-out is within 0.0001 in. per inch. Application can be made on turret lathes, drilling machines. The holder is suited also to position second operation work on surface grinders, cylindrical grinders, milling machines.

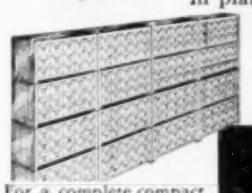
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1836

FOR ALL SMALL PARTS STORAGE

"E-Z-C" PLASTIC DRAWER CABINETS—with LARGER 2-INCH DEEP DRAWERS

Here's the newest, low-cost multi-purpose storage cabinet—strong enough to hold 15 drawers full of lead, yet minimum light in weight. The see-thru clear plastic drawers (¾" deeper than average size) show at a glance the parts or equipment they are storing. Increased convenience from the deeper drawers—15 drawers hold any and all parts, office supplies, etc.—for use in plant, office or home.



- Removable Dividers in Each Drawer
- Electric Weld All Steel Cabinet
- Name Plate Slot in Each Drawer
- Safety Catch Prevents Any Spilling

For a complete compact storage room, you can stock E-Z-C Cabinets up, side by side, or back to back. Send for descriptive literature.

KLEER-VUE MANUFACTURING CO.
636A PENN AVE.
PITTSBURGH 22, PA.

If you write maker identify as IEN - 1837

BROWNHOIST BUILDS BETTER BUCKETS FROM FACTORY FOR LESS

- **BUY DIRECT**
- **ROPE REEVE, LINK TYPE POWER WHEEL**
- **WRITE FOR CATALOG**

INDUSTRIAL BROWNHOIST CORP.
BAY CITY, MICHIGAN

156

If you write maker identify as IEN - 1838

124,800 holes per day! . . . using six DUMORE Automatic Drill Heads

Parts are hand loaded in an automatic indexing rotary table with 24 stations. Peak production has reached 23,000 pieces.

A Dumore Precision Drill Grinder sharpens drills after a full day's production. Maximum drill life per grind has reached 23,000 holes.

Get amazing cost-reducing benefits with Dumore tools

ONE west-coast manufacturer uses six continuous running Dumore Automatic Drill Heads to drill tiny brass parts — 20,800 per head per day. Using a No. 71 drill (dia. .026") and hole depth of .069", this company reports amazingly high production, plus slashed costs of drill breakage, down-time and scrap loss.

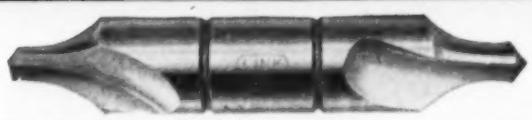
Amazing too, are the results they achieve using a Dumore Precision Drill Grinder to sharpen drills for this job. They actually get a full day of continuous production for every Dumore sharpened drill, without stopping to regrind.

Get all the information about these tools. Ask your nearby industrial distributor or write,

THE DUMORE COMPANY
1319 Seventeenth Street • Racine, Wisconsin

If you write maker identify as IEN - 1839

FAR LESS TIP BREAKAGE with "RING SEAT" CENTER DRILLS



"RING SEAT" CENTER DRILLS FOR YOUR HEAT-TREATED PARTS

The "R" type, curved contour Ring Seat center drills give you a stable, accurate, precision center, quickly restored after heat-treat.

Ring Seat center drills produce a protected center at no extra cost—and carry a built-in discount because they last longer.

Lapping After Heat Treat

is a simple, quick operation since only about one-third the usual area needs clean-up. Lapping with a rotating felt wick removes heat scale and restores a perfect center—at the original place.

• A PREMIUM DRILL AT NO EXTRA COST •

LINK INDUSTRIES
13848 Elmira — Detroit 27, Mich.

FREE CIRCULAR

If you write maker identify as IEN - 1840

It's Easy...with WITTEK Roll Feeds and Reel Stands

Wittek Roll Feeds handle any type of coiled strip stock and are made in single roll, double roll, and compound types with straighteners, in models to feed in any of four directions. They are reliable and accurate with simple, quick adjustment of feed length. Standard sizes and models meet a wide variety of press size and capacity conditions.

Wittek Reel Stands facilitate handling coiled stock.

Write for full particulars

WITTEK Manufacturing Co. — Automatic Roll Feeds and Reel Stands

4336 W. 24th Place, Chicago 23, Illinois

If you write maker identify as IEN - 1841

Can our product help you improve your product?

This is **INNER-SEAL.** It's extremely durable, extremely effective . . . with many features that eliminate sealing problems in the manufacturing of countless products.

Inner-Seal's bead is of *live sponge rubber* which compresses under pressure, then springs back into shape. Its flange is of *woven spring wire,* tough but flexible enough to fit snugly around corners. Its coating is of *waterproof neoprene* . . . designed for sub-zero or tropical temperatures, sunlight, humidity, grease, oil or abrasion. Available in various dimensions. Standard Inner-Seal in many colors . . . heavy-duty "dumb-bell" type in black . . . special types can be made to order.

Although Inner-Seal is most widely known in the refrigeration, railway, shipping and automotive fields, it's continually finding many new applications. Maybe *you* have one . . . maybe we can help!

FREE SAMPLES and complete information. *Write today.*

Bridgeport INNER-SEAL *Live Rubber* WEATHER STRIPPING

BRIDGEPORT FABRICS, INC., BRIDGEPORT 1, CONN.

If you write maker identify as IEN - 1842

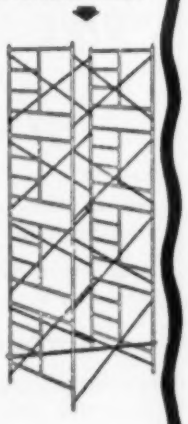
WORLD'S FASTEST, SAFEST SCAFFOLDING — WACO

ROLLING TOWERS
Speedy and simple for maintenance work!

SECTIONAL SCAFFOLDING
Saves hours in scaffold erection time!

BIG WACO FEATURES!

Only WACO features the original, proven "SPEEDLOCK". Speed, safety and convenience in scaffold assembly.



- Built-in, floating coupling pins
- Built-in ladders
- Pivoted cross-braces
- Heavy duty rubber tire wheels
- Brake-type casters

Phone your local WACO distributor *today* for a free demonstration. Distributors in all principal U.S. and Canadian cities.

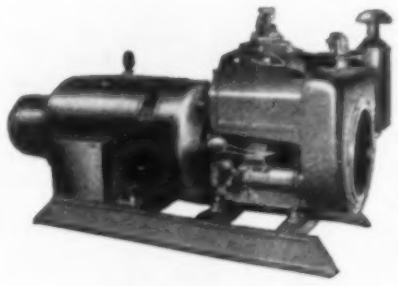
Write for free file folder

SALES RENTALS — **WILSON-ALBRECHT CO., INC.** DEPT. R, 3565 WOODDALE AVE. MINNEAPOLIS 16, MINN. — WACO

If you write maker identify as IEN - 1843

GENERATOR . . Engine driven ac., 10 kva., for stand-by and utility duty

Source: UNIVERSAL MOTOR CO.
492-96 Universal Drive, Oshkosh, Wis.



Wisconsin engine

Drive for this new Model-10500 generator assembly is by a 4-cylinder air cooled engine so no protection is required for the cooling medium in sub-zero installations. The generator is available in single and 3-phase design for operation on 110 or 220-volt ac. with nominal rating at 10 kva for these characteristics.

Starting can be specified as electric with manual control, or with connection to a normal power source so the engine will start and the generator will take over a lighting load in an emergency. The assembly is suited also for construction work, where an electric circuit is not normally available, to supply power for flood lighting and to drive portable electric tools. Overall dimensions are about 55 by 31 by 33 inches. Weight is a little over 1,000 pounds.

If you write maker identify as IEN - 1844

DRILLING . . Pneumatic tool has angle head for close quarter work

Source: KELLER TOOL CO.
1948 Parks St., Grand Haven, Mich.

Stalling does no harm

Series 11-C is a new line of three angle type portable pneumatic drills. The three rate holes to ¾ in. in aluminum or brass and to 11/16 in. in mild steel. Each employs an air motor operating at a speed best suited for its particular size.

Five angle attachments are all interchangeable. There are two spindle types for threaded chucks and for Jacobs taper spindles. Construction includes bevel gears with shafts mounted on ball and roller bearings. Neoprene is used in the control valve seat.

Identify as IEN - 1845

Waste fume burning by catalytic action, previously described IEN-8881-52 for Oxy-Catalyst Incorporated, is working successfully for Sun Oil Company in a partial installation at its Marcus Hook refinery. An estimated saving of $27,500 is being made on an annual basis, enough to pay for the equipment. An annual return of $80,000 is forecast when the installation is complete. Waste carbon monoxide and hydrocarbons, blown out of reactors, are burned as they pass the catalyst. Eighty per cent of the resulting heat is converted to steam and the remainder is turned into electric power by a gas turbine driven generator.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1846

For Overhead Storage

THE MOORE LOCKERBASKET

A new type basket for overhead storage of clothing and effects. The Moore Lockerbasket provides a sanitary and secure means for storage in modern changerooms. Basket slides on hanger, lowers onto garment hooks, gives slip-proof clothing suspension. Galvanized electro-welded wire. Basket 14" square, provides over 1200 cu. in. storage.

Write for Catalog and free book, "The Design and Layout of Industrial Change Rooms."

THE MOORE COMPANY • DEPARTMENT 92
1036 QUARRIER STREET • CHARLESTON, WEST VIRGINIA

If you write maker identify as IEN - 1847

ADD COMFORT . . . SPEED PRODUCTION with Aerovent FANS

MAN COOLING

Keep your employees cool for more efficient work. Aerovent "Macheta" airfoil fans are efficient and economical.

Certified Ratings — PFMA

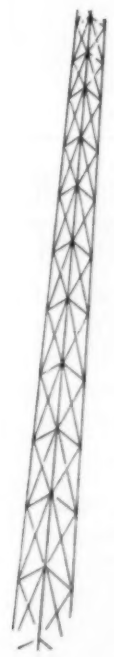
Model 39 Mancooler — 2, 4 or 6 blade Sizes 24" to 48"
Other Models: Direct Connected, Extended Shaft, Duct Type, Belt Driven, Pulley Drive. Sizes 12" to 144".

WRITE TODAY FOR ENGINEERING BULLETIN

AEROVENT FAN CO., Inc.
Ash & Brown Streets, Piqua, Ohio
Competent Sales Engineers in Principal Cities

If you write maker identify as IEN - 1848

TELEVISION INDUSTRY *relies on* AETNA *for* PLYWOOD



Many manufacturers in the miracle industry, television, rely upon AETNA for plywood . . . Hardwood plywood that gives distinctive elegance to TV cabinets . . . wall paneling in offices or special furniture . . . utility plywood for partitions or storage units.

AETNA carries plywoods from mills all over the world. Out of this wide range of stock AETNA can furnish plywood for any industrial or decorative use.

AETNA'S engineering staff is one of the finest in the country. It provides valuable technical help, including performance data of plywood, design calculations and industrial facts. These services, so important to efficient application of plywood, are free.

Call your nearest AETNA office or branch warehouse, or write, for prices, information and technical plywood help.

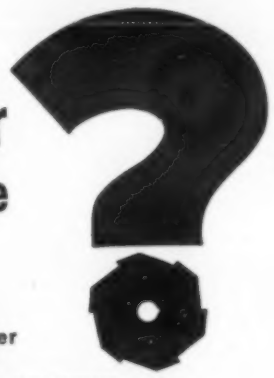
Write for Aetna's new Price Lists TODAY.

AETNA PLYWOOD & VENEER CO.
1724 N. Elston Avenue, Chicago 22, Illinois
ARmitage 6-7100
BRANCH WAREHOUSES: Grand Rapids 7, Mich.; Indianapolis 2, Ind.; Rockford, Ill.

PLYWOOD for every purpose — every industry

If you write maker identify as IEN - 1850

Which Milling Cutter would you choose



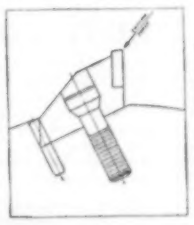
✓ CHECK ONE

1. ..... a SOLID cutter with rigid tooth back-up.
2. ..... an INSERTED TOOTH cutter with replaceable blades.
3. ..... A MILLING CUTTER THAT COMBINES THE ADVANTAGES OF BOTH.

Check (3) and you've checked

THE NEW MILLIT

Millit's fully backed up blade is seated against a body abutment that absorbs all cutting forces.



This means Millit gives you both a rigid tooth back-up and replaceable blades.

Write for the Millit Folder today. Address:
Millit Div., Kraus Design, Inc.
33A Flint Street
Rochester 8, New York

If you write maker identify as IEN - 1851

BRING OVERHEAD COSTS DOWN WITH WEBER *Aerostand*

ADAPTABLE FOR HUNDREDS OF JOBS!

No matter what the industry, Weber Aerostand can serve it better...more efficiently...more economically and above all far more safely when it comes to raised platform jobs. The worker has complete safety while working on a platform from 3′ to 24′ in height. Both hands are free for the job...tools are within easy reach. Resulting in a better job at lower cost.

Weber Aerostands roll on and off the job quickly, collapse easily for storage. Truck locks assure a stationary stand while working. Guard rails and skid-proof surfaces on steps and platform guarantee sure footing. Many industries use Weber Aerostands. They are familiar objects in the Aircraft, Oil, Railroad and Building Industry.

AEROSTAND 10E

AEROSTAND 10D—Platform height from 3′ to 10′. (With Aerostand 4, gives maximum 14′.)

AEROSTAND 10E—Same as Model 10D—with addition of 16″ pneumatic wheels for smoother, easier mobility.

AEROSTAND 20A—Provides elevated work platform from 13′ to 20′. (With Aerostand 4, gives maximum 24′.)

AEROSTAND 4—Handiest utility work stand made. 4′ high work platform. Combines with Models 10D, 10E and 20A to give increased working height.

FOLDER AVAILABLE—If you would like to read about the many interesting uses for Weber Aerostands ask for folder IEN 100.

FREE CONSULTATION SERVICE—Weber engineers can often suggest uses for Aerostand that have not been apparent to the management of an individual plant. They are experts at determining the type and number of Aerostands that will give you maximum efficiency for your specific requirements. Please write us regarding your particular plant problem.

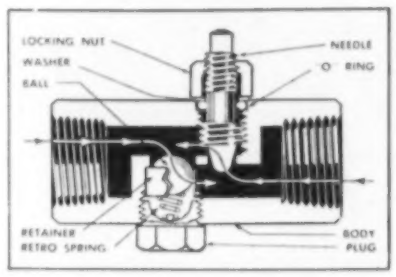
WEBER *Aerostand*
holds the man up to the job IN SAFETY

WEBER AIRCRAFT CORPORATION
(AEROSTAND DIVISION)
2820 Ontario Street • Burbank, California

If you write maker identify as IEN - 1853

VALVE . . Check and needle unit to throttle flow in one direction only

Source: PNEU-TROL DEVICES INC.
1438 Keating Ave., Chicago 51, Ill.



Pneumatic or hydraulic

Gas or liquid flow is controlled in one direction by positioning a threaded needle. Flow is free in the opposite direction in which pressure unseats a check ball. The valve is made in five sizes from ⅛ to ¾ inch. It can be specified in brass, aluminum, steel or stainless steel for the body with other parts made of stainless steel. Male end fitting tube adaptors are available. Operating pressure is to 5,000 pounds.

The check ball is now backed up by a spring as compared to the unbacked design, previously described IEN-10244-50, so the valve can be applied in a line in any position. The threaded needle also now carries a central unthreaded portion where an O-ring seals against leakage as shown in the illustration.

If you write maker identify as IEN - 1854

CORROSION PROOFING . . Liquid to dip coat and cure on metal parts

Source: MUNRAY PRODUCTS INC.
12398-402 Crossburn Ave., Cleveland 11, Ohio

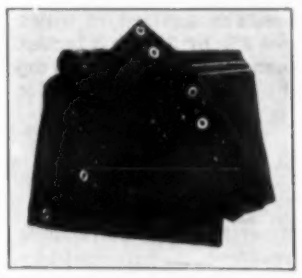
Permanent protection

Cycloflex 7731 is a new free flowing viscous liquid for dip application on finished metal parts to be followed by heat curing. The final film is flexible, rubber like and can be produced in any thickness from 1/32 to ½ inch. The material has been designed to replace rubber for resistance to attack by acids, alkalis, oils, salts, petroleum solvents. It has been approved by the Army Ordnance Fire Control Division.

If you write maker identify as IEN - 1855

PROTECTING . . Canvas curtain forms booth around dangerous work

Source: EASTERN EQUIPMENT CO.
44 Terwood Road, Willow Grove, Pa.



To your order

Operations involving arc flash, molten splash, flying chips can be enclosed by this new flame resistant canvas curtain suspended from suitable supports. The curtain is made from 8, 10 or 12-oz. duck and Underwriters' Grade asbestos cloth in specified sizes to 100 sq. ft. or more. Brass grommets are located 12 in. apart on one long side. Edges are hemmed. Seams are double row stitched. Blankets, also available, are made with grommets in the four corners in standard construction.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1856

PHOTO EQUIPMENT... Geared to SCIENTIFIC and INDUSTRIAL Uses

FREE CAMERA, LENS and EQUIPMENT **CATALOG**

NEW—72 pages crammed with THOUSANDS of newest PHOTO TOOLS, CAMERAS, LENSES, PROJECTORS, Lighting Equipment, Developing Equipment, ENLARGERS, etc. for the amateur and professional, in every day SCIENTIFIC and INDUSTRIAL work.

CAMERAS	Commercial — Recording — Identification — Special Purpose —Polaroid Land Back—Laboratory — Photomicrography — etc.
ENLARGERS	Reducers — Copying, etc.
LENSES	Largest stock from ⅜″ to 72″— all speeds — Portrait — Commercial—Wide Angle—Tele-Lens—Coating, etc.
PRINTING EQUIP.	35 Mm. to 8x10 in. etc.
PROJECTORS	Demonstration and Instruction.
LABORATORY EQUIP.	Stainless Steel, Slide Equip., Dryers, etc.

Burke & James, Inc.
311 S. Wabash Ave., Chicago 4, Ill. U.S.A.

Fine Photographic Equipment For Over 54 Years

If you write maker identify as IEN - 1857

Check up ON THE 132 USES FOR SPENCER VACUUM...

It's a new tool for industry that is eliminating tedious, time consuming jobs. It handles hot materials, reclaims metals, picks up liquids, removes dirt and dust at assembly and inspection benches and from the finished goods.

And at night the same Spencer System can clean immense floor areas in the factory, and clean and polish the floors, furnishings, and equipment in your offices. Sizes from ½ to 100 HP. Ask for the bulletin "132 Unusual Uses."

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD
466-K

If you write maker identify as IEN - 1858

IS RUST EATING AWAY YOUR PARTS INVENTORY?

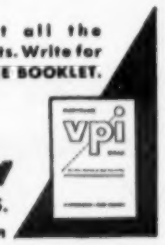
Then you Need MARVELLUM VPI® WRAP
Paper coated with a Volatile Corrosion Inhibitor

Avoid the damages of destructive rust, the loss of time and money spent in refinishing inventory parts, the mess and bother of slushing and cleaning. Wrap your parts — or merely line your bins — with economical Marvellum VPI.

VPI is a paper coated with a new chemical which slowly vaporizes, forming an invisible protective film that prevents corrosion. Used as a wrap it keeps rust away for years. Used as a liner it gives you many months of trouble-free storage. Developed during the war as a protective wrap for shipment of steel and aluminum parts, many companies are also using it to protect their inventories or as a lining for tote boxes on the production floor.

Marvellum VPI is available in sheets, envelopes or special containers. Marvellum has complete facilities under one roof for designing, producing and coating VPI Wraps. Also makers of a wide range of other barrier materials to meet your needs for product protection. Distributors in all major cities.

Get all the facts. Write for FREE BOOKLET.

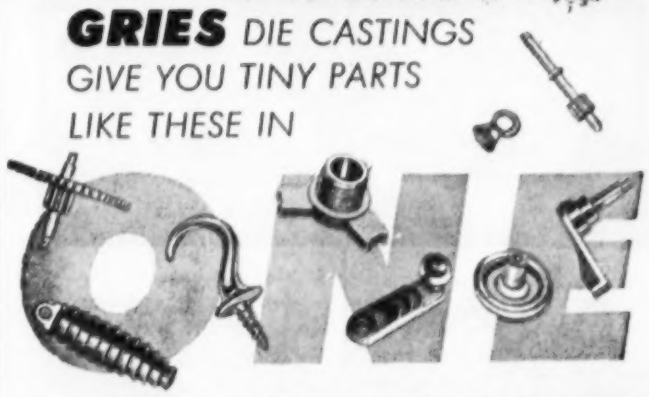


The Marvellum Company
24 APPLETON STREET HOLYOKE, MASS.
First and Foremost in VPI Protection

If you write maker identify as IEN - 1859

MULTIPLE ASSEMBLIES FOR SMALL PARTS BELONG TO HORSE-AND-BUGGY DAYS

GRIES DIE CASTINGS GIVE YOU TINY PARTS LIKE THESE IN



COMPLETE OPERATION

Compare GRC zinc alloy die castings with small parts produced by other methods. See how Gries completely finished parts save you time, labor, money. Die cast in one high-speed operation, they open broad opportunities for your new design and product ideas. GRC offers fast delivery of 100,000 pieces to many millions. Write today for bulletin and samples. Send prints for quotations.

America's Foremost Producers of Tiny Die Castings

SMALLNESS UNLIMITED
Max. Wt.: ½ oz.
Max. Lgth.: 1⅝ in.

GRIES REPRODUCER CORP.
Manufacturers of Small Castings *Exclusively*
797 E. 132nd St., New York 54, MOtt Haven 5-7400

If you write maker identify as **IEN - 1860**

MAKE THIS FIRE TEST WITH CABOT'S ANTI-PYRE PAINT

Prove it yourself. Set fire to this paper sample, watch the flames snuff out when they reach Cabot's Anti-Pyre.

PROTECTION FOR SCHOOLS, FACTORIES, INSTITUTIONS

Cabot's Anti-Pyre is a non-toxic, effective fire retardant paint producing a smooth, uniform white finish, free from brush marks. Can be tinted.

WRITE TODAY for your free test paper sample and descriptive folder.

SAMUEL CABOT INC.
233 Oliver Bldg., Boston 9, Mass.

If you write maker identify as **IEN - 1861**

SPRAY PAINTING BOOTHS

all types and sizes

Binks makes a size and type of spray booth for every shop...from small bench type models to giant Dynaprecipitor water-wash booths. All are correctly engineered to remove fumes and overspray efficiently. And all conform with requirements of fire, health and state authorities.

SEND FOR CATALOG-DATA BOOK No. 166 that describes the entire line in detail. No obligation. Write Binks Manufacturing Co., 3120-34 West Carroll Ave., Chicago 12, Ill.

Binks
EVERYTHING FOR SPRAY PAINTING

GUNS • SPRAY BOOTHS • MATERIAL TANKS • EXTRACTORS & ACCESSORIES

REPRESENTATIVES IN PRINCIPAL U. S. & CANADIAN CITIES • SEE YOUR CLASSIFIED DIRECTORY

If you write maker identify as **IEN - 1862**

Speed Nuts® ...proved cost-savers on assembly lines throughout industry

"U" and "J" Type SPEED NUTS are self-retaining; hold a constant hole alignment, and will not vibrate loose. They are made of highest quality spring steel in a wide variety of standard and special sizes. "U" and "J" Types are only two of thousands developed by Tinnerman Engineers to cut fastening costs. Ask your Tinnerman Representative, or write us direct for a FREE "Fastening Analysis."

TINNERMAN PRODUCTS, INC.
Dept. 12, Box 6688, Cleveland 1, Ohio

If you write maker identify as **IEN - 1863**

SCREENING . . Vibrating equipment for chemicals, coal, grain, rock

Source: HEWITT-ROBINS INC.
664-68 Glenbrook Road, Stamford, Conn.

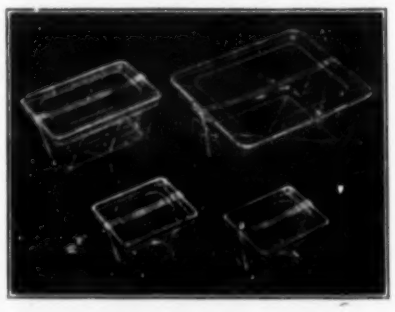
Size and technical data upon request

Vibrex Model MS is a new design in the company's line of Circle-Throw motor driven vibrating screens. The vibrating action provides two positive strokes, with each revolution of the counterweights, to bounce the material out of and above the screen cloth. Circular action is imparted to the particles so they rotate as they progress across the deck to "try themselves for size" repeatedly. The screen frame is mounted on coil springs enclosed in neoprene boots to keep out foreign matter. Each assembly has a 3-in. discharge lip. Single and double-deck designs are available.

If you write maker identify as **IEN - 1864**

STORING . . Plastic containers to hold materials and parts visibly

Source: FRANKLIN PLASTICS INC.
U. S. Highway 322, Franklin, Pa.



Single units or set

Three sizes are available in a set of transparent polystyrene lid equipped containers, originally developed to hold foods in a refrigerator. The set or selected units in any of the three sizes are now available for general industrial application requiring storage and handling of materials and small parts where interior visibility is desirable.

Largest unit measures 6¾ by 8½ by 3¼ inches. The intermediate size is 6⅛ by 3⅞ by 3 inches. The smallest, of which two are provided in the set, measures 3⅞ by 3⅛ by 3 inches. The intermediate size and the two small units stack on top of the large one for an overall height of 9¼ inches. List price is about $2.50 per set. Packaging is 24 sets to a case.

Identify as **IEN - 1865**

Pneumatic lines to the brakes and controls on a Unit mobile crane have been made of flexible metal hose, manufactured by Titeflex Incorporated. The metal hose replaced the previously standard rubber-fabric lines to handle the compressed air and resist failure due to vibration, flexing. Now the metal hose with a braided wire cover is standard equipment on the crane.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1866**

Specify GM PRECISION-ENGINEERED SERVO MOTORS

RELIABLE PERFORMANCE
RUGGED CONSTRUCTION

ACTUAL SIZE

In the operation of—

- GUNFIRE CONTROLS
- ROCKET CONTROLS
- GUIDED MISSILES
- AIRCRAFT CONTROLS
- INDUSTRIAL CONTROLS

G-M Servo Motors can be supplied to meet rigid military specifications with regard to humidity, temperature range, vibration and altitude. Available in 2, 4 or 8 pole construction and for frequencies from 60 to 400 cycles.

Write today for complete information.

Another product of GM LABORATORIES • Inc.

4334 NORTH KNOX AVENUE, CHICAGO 41, ILLINOIS

If you write maker identify as **IEN - 1867**

TORIT Door Fastener
The sturdy and efficient door fastener used on Torit cabinets is available for use on your own products. Strike plate either flat or angular. Write for quantity prices.

Torit Manufacturing Co.
286 Walnut Street
St. Paul 2, Minnesota

DUST COLLECTORS

Here is a compact, efficient installation. One Torit Dust Collector and three saw filing machines. Note that there is no interference with operation or inspection of work, and practically no obstruction of the light source. Neither is any heat lost for Torit Dust Collectors return filtered air to the room.

This is another of the more than 25,000 installations where Torit Dust Collectors are giving complete satisfaction, cutting operating costs and improving working conditions. They are found in every kind of plant, from the smallest to the largest. If you have a dust problem it will pay you to contact Torit.

P.S. Ask for the latest Torit catalog.

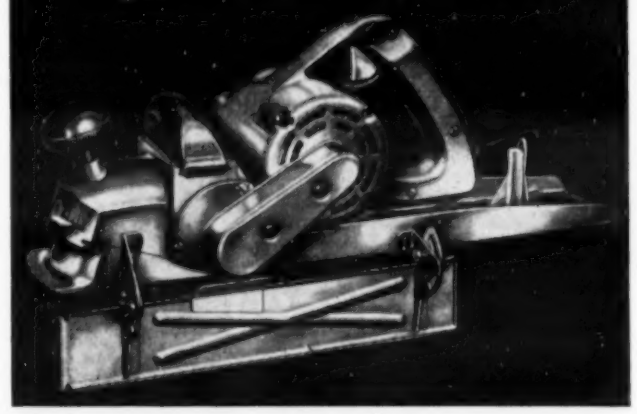
If you write maker identify as **IEN - 1868**

NEW!

SKIL 3 INCH PLANE

Only $139.50

Biggest Value In The Field!



This new Model 190 SKIL Plane offers new performance standards . . . handles all edge and surface planing jobs.

- The lightest big-capacity plane on the market . . . only 10½ lbs.
- Lowest priced portable plane of this capacity.
- Cutting capacity 3" wide by 0" to ⅛" deep. Convenient lever control.
- Reversible chip deflector for safety and convenience.
- Exclusive cog belt drive . . . quiet, needs no lubrication.
- Straight cutting knives, easy to sharpen, positively locked for safety.

Contact your distributor or write for descriptive literature

SKIL Portable Tools
SKIL Products are made only by
SKIL Corporation
formerly SKILSAW, Inc.
5033 Elston Ave., Chicago 30, Ill.
Factory Branches in 34 Principal Cities.

SKIL PORTABLE TOOLS

If you write maker identify as IEN - 1870

Femco COMMUNICATION

Femco CRANEPHONES
Talk from cab to floor and cab to cab

Femco AUDIOPHONES
Fixed-point industrial communication

Femco PAGEPHONES
Flexible inter-com and page systems

Femco PORTAPHONES
Movable as your work progresses

Efficiency is improved—production goes up, when Femco equipment is installed. Consider: as many mike-speaker stations as you need, moving or stationary, anywhere in your plant, office or yard.

DEMONSTRATIONS ARRANGED

ASK FOR YOUR FEMCO DATA KIT

FARMERS ENGINEERING & MANUFACTURING COMPANY
IRWIN, PENNSYLVANIA

SPECIALISTS IN ELECTRONIC Communication and Control

If you write maker identify as IEN - 1871

You can't beat a soldered connection

for electrical conductivity and permanence!

SOLDERED connections eliminate loss of current, fire hazard, radio interference and excess heat which result from loose, corroded, arcing NON-SOLDERED connections.

For over 50 years experts have specified American Beauty Electric Soldering Irons. They know American Beauty Irons are built to LAST LONGER, OPERATE DEPENDABLY and BE SERVICED QUICKLY.

Build better with solder . . . Solder better with

American Beauty
SOLDERING IRONS

WRITE FOR FREE LITERATURE

Dependable • Durable • Efficient

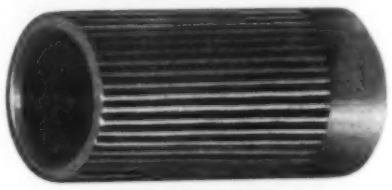
SINCE 1894

AMERICAN ELECTRICAL HEATER COMPANY
DETROIT 2, MICHIGAN A-103

If you write maker identify as IEN - 1873

BEARING . . Toothed steel bushing broaches its way into a locating hole

Source: AEROQUIP CORP.
303 S. East Ave., Jackson, Mich.



Ask for Bulletin 122

Broached teeth, slightly larger in diameter than the plain piloting end of this new bushing, cut their way in a hole into which the bushing is pressed. The cutting action locates and anchors the bushing securely in place without exerting pressure that would be required by a regular plain press fit. Application can be made with little danger of bushing collapse or cracking of castings, jigs, fixtures, particularly when they are made of the light metals or plastics. The bushing is hardened steel treated with a black oxide to prevent corrosion. The metal cut out by the teeth collects in one or more grooves provided in the bushing for this purpose.

Stock sizes in the headless design shown in the illustration range from 3/16 to 3/4 in. in bore diameter, from 3/16 to 7/8 in. in outside diameter measured over the teeth and from 1/4 to 1 in. in length. A second stock line, including a head at one end, is available with 3/16 to 1/2-in. bore, 3/16 to 5/8-in. body diameter and 3/16 to 1-in. body length.

If you write maker identify as IEN - 1874

PLASTIC . . Petroleum resin in solid, flaked and solution forms

Source: PENNSYLVANIA INDUSTRIAL CHEMICAL CORP.
52 State St., Clairton, Pa.

Ask for copy of Piccopale Brochure

Piccopale is a new transparent thermoplastic available in unlimited quantity from deep cracking of petroleum. It is available in four standard grades and in custom made solutions and blends for large volume orders. It is suited as a raw material in textiles and floor coverings, in manufacture of pulp and paper, lumber and wood products, petroleum, rubber, leather, plastics, stone, clay and glass.

If you write maker identify as IEN - 1875

TRANSFORMER . . Strip wound cores of silicon steel carried in stock

Source: PERMOFLUX CORP.
4902 W. Grand Ave., Chicago 39, Ill.

Precise tolerances

Cee-Cor trade names a new strip wound transformer core. It is made from grain oriented silicon steel strip in 1, 2, 4 and 12-mil gages in a range of standard window sizes and build-ups. Delivery is from stock. The company is prepared also to manufacture special coils to order.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1876

DAY DUST CONTROL

SINCE 1881

A SINGLE UNIT OR A COMPLETE SYSTEM

DAY "AC" FILTER HAS 99.99+% FILTERING EFFICIENCY

The new efficiency achieved with the **DAY "AC"** Dust Filter provides benefits not possible with conventional filters. Its 99.99+% filtering efficiency applied to your plant will give you better dust control, larger recovery of valuable product, minimized plant hazards and more economy in space, installation and maintenance costs.

72 YEARS' EXPERIENCE IN INDUSTRIAL DUST CONTROL

Since 1881, The **DAY** Company has specialized in the engineering, manufacture and installation of dust control systems for industry. If you have a dust problem, **DAY** can provide an effective and economical solution.

WRITE FOR NEW BULLETIN

It will give you detailed facts and figures on the **DAY "AC"** Dust Filter and other **DAY** equipment.

The DAY Company

813-3rd Avenue N.E. • Minneapolis 13, Minnesota
IN CANADA: P.O. Box 70T, Ft. William, Ont.
Branch Plants in Buffalo, Ft. Worth and Welland, Ont.

If you write maker identify as IEN - 1877

Fast Motor Service

Factory approved motor service in every industrial area from 97 Allis-Chalmers Certified Service Shops

ALLIS-CHALMERS CERTIFIED SERVICE SHOPS are independent service shops which meet rigid standards for ability, experience, equipment and business integrity. They use factory approved methods and parts and do your work promptly at a fair price.

Of course, Allis-Chalmers Certified Service Shops give good service on any electrical equipment, of any make. To find the Certified Service Shops in your area, call your nearby Allis-Chalmers District Office or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3867

ALLIS-CHALMERS

If you write maker identify as IEN - 1878

Save Valuable Manpower With Automatic Control

T-27 TIME SWITCH

- Adaptable to nearly every time-control job.
- Cuts manpower costs and gives increased efficiency.
- With astronomic dial it follows changing dusk-dawn schedules. An omitting device enables the switch to skip certain days.

Contact your nearest G-E sales office. General Electric, Schenectady, New York. 603-135

GENERAL ELECTRIC

If you write maker identify as IEN - 1879

A NEW UNIVERSAL DEVELOPMENT

Grease Fittings with Flush-Type Heads!

Where protruding heads of ordinary grease fittings are vulnerable to a heavy blow or collision, the new Universal Flush-Type Fittings stay put! This new streamlined design developed by Universal provides a smooth surface, which eliminates possible damage to the fittings and to the machine.

The most important feature of Universal Flush-Type Fittings is their exclusive ball-check construction. The seated ball, supported by a strong spring, prevents oil or grease leakage caused by back pressure. Because of special spring design, the ball cannot be unseated.

CROSS SECTION

Providing free flow of lubricant, the back-up spring in the Universal Flush-Type Fittings is designed so passage through it at the point of maximum depression is greater than the opening at the top of the fitting.

Learn more why these newly-developed Flush-Type Fittings belong on your machinery. They come in sizes from 3/8" to 1" threads. Write now for full details on the new Universal Flush-Type Fittings.

UNIVERSAL LUBRICATING SYSTEMS, INC.
785 Allegheny Avenue • Oakmont, Pa.

If you write maker identify as IEN - 1880

Tests show that our new A-25 rheostat is so rugged that it will stand up under the most adverse conditions

It gives maximum wattage dissipation, and the added safety factor made possible by our new high temperature blue-gray enamel.

The terminals, made of strong corrosion resistant alloy, are permanently welded to the winding form.

The wound ring is made an integral part of the refractory base by vitreous enamel. The phosphor bronze actuating arm, to which is attached a graphite brush, gives perfectly smooth action, with excellent electrical control.

Send for new A-25 bulletin.

HARDWICK, HINDLE, INC. the mark of quality
Rheostats and Resistors
Subsidiary of
THE NATIONAL LOCK WASHER COMPANY
Established 1886 NEWARK 5, N. J., U.S.A. for more than half a century

If you write maker identify as IEN - 1881

Typical casting crack as revealed by Spotcheck in sampling or maintenance inspection.

CHECK THESE LOW PRICES

Quantity	Cleaner		Penetrant		Developer	
	One Can	Case Lots	One Can	Case Lots	One Can	Case Lots
12 oz. Pressure Can	$4.50 Each	(12 cans) $2.00 per can	$4.50 Each	(12 cans) $2.50 per can	—	—
Pint Cans	—	—	$4.00 Each	(12 cans) $2.25 per can	$4.00 Each	(12 cans) $2.00 per can
Quart Cans	—	—	$6.00 Each	(5 cans) $4.00 per can	$5.00 Each	(5 cans) $3.00 per can
1-Gal. Cans	$3.00 each	(10 gallons) $2.50 per gal.	$15.00 each	(10 gallons) $14.00 per gal.	$9.00 each	(10 gal.) $8.50 per gal.
5-Gal. Cans	$2.50 per gal.	(50 gallons or more) $2.00 per gal.	$13.00 per gal.	(50 gallons or more) $10.00 per gal.	$7.50 per gal.	(50 gal. or more) $7.00 per gal.

Also complete kits for HANDY SPRAY APPLICATION
$35.00 PLUS $1.00 shipping and handling

Eight assorted cans of Cleaner, Penetrant and Developer; accessories, instruction book and carrying case.

All prices f.o.b. Chicago, Illinois. Spotcheck Inspection requires application of Cleaner, Penetrant and Developer. Order quantity desired of each on your company purchase order.

FOR COMPLETE KIT—ORDER NOW

MAGNAFLUX CORPORATION
5914 Northwest Highway, Chicago 31, Ill.

Please send.....Type SK-1 SPOTCHECK KITS at $35.00 each, plus $1.00 each, packing and shipping cost.

☐ CHECK ENCLOSED. Amount: $.....
☐ Send on our P. O. Number.....
☐ Send only FREE Illustrated bulletin, now.

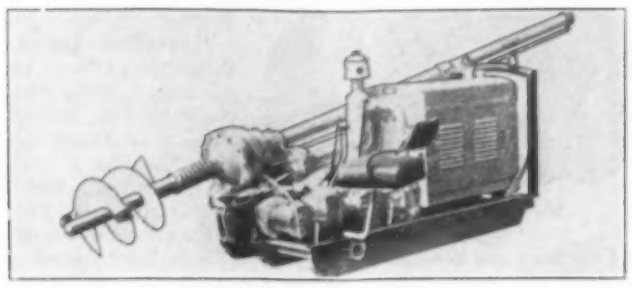
Name.....Title.....
Company.....
Address.....
City.....Zone.....State.....

Prices subject to applicable state or local sales tax.

If you write maker identify as IEN - 1883

CONSTRUCTION . . Earth drill for 6 to 36-in. holes, to 12 ft. down

Source: BUDA CO.
15401 S. Commercial St., Harvey, Ill.



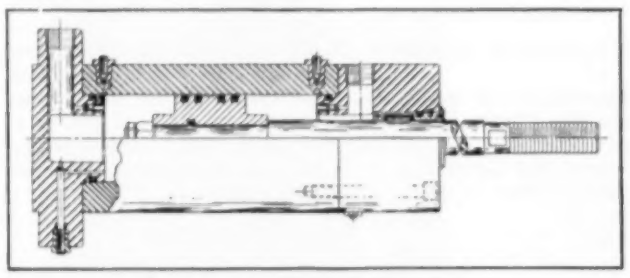
For clean holes quickly

Hydraulic controls raise the spindle of this new Model Y-1 portable earth drill from travel to operating position vertically or at a desired angle. The company's Type 6-B-230 industrial gasoline engine provides the driving power for continuous or intermittent operation. The transmission is heavy duty industrial type with four speeds forward and one in reverse. The equipment, including the engine, is assembled on a steel skid frame that can be mounted on a 1½ to 2½-ton truck. Controls center at levers at the operator's seated position beside the transmission.

If you write maker identify as IEN - 1884

CYLINDER . . Double acting hydraulic for working pressure to 2,000 pounds

Source: HYDRO-LINE MFG. CO.
710 19th St., Rockford, Ill.



Suited for use in mills and foundries

Series J designates a new line of hydraulic cylinders, built to JIC Specifications, for service with oil or water in sizes to 10-in. diameter. Construction includes steel body, bored barrel, hardened piston rod, rod scraper and a new cartridge type packing. Cushions are optional. Both the barrel and the piston rod are honed and ground to a 10 micro-inch finish. Foot, flange, pin eye, and trunnion mountings are available.

Identify as IEN - 1885

Continuous casting of brass, IEN-0122-50, has spread to steel with announcement by Freyn Engineering for Koppers Company of new equipment to do the job. Molten steel from a ladle flows through a control to a copper water-cooled mold where it takes form as the mold oscillates. The steel continues downward inside tube coils that spray cool it. Pinch rolls feed it downward to a moving torch that cuts it into sections.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1886

WRITE YOUR OWN TICKET FOR
Quality Wire!

SPECIFY SENECA FOR WIDE RANGE OF USES

- ☐ Aircraft
- ☐ Armature
- ☐ Cable
- ☐ Car Seal
- ☐ Cotter Pin
- ☐ Curtain Spring
- ☐ Flexible Shaft
- ☐ Glass Netting
- ☐ Hair Pin
- ☐ Lock Spring
- ☐ Piston Ring
- ☐ Plow Steel
- ☐ Ring Traveler
- ☐ Rope
- ☐ Spark Coil Core
- ☐ Spring
- ☐ Stapling
- ☐ Stitching
- ☐ Weaving

Whatever your needs in wire . . . specify SENECA for *top quality* and *uniformity!* High or low carbon steel wire . . . aluminum . . . bronze. Sizes No. 40 W & M (.007) and larger . . . round, half round, oval, square, flat, straightened and cut. Finishes—bright, soft annealed, coppered, liquor, tinned, bright galvanized, oil tempered, enameled. Write about your requirements.

SENECA WIRE & MANUFACTURING COMPANY, FOSTORIA, OHIO
Representatives in practically All Principal Cities

If you write maker identify as IEN - 1887

NEW 1953 DESIGN BOOK FREE!

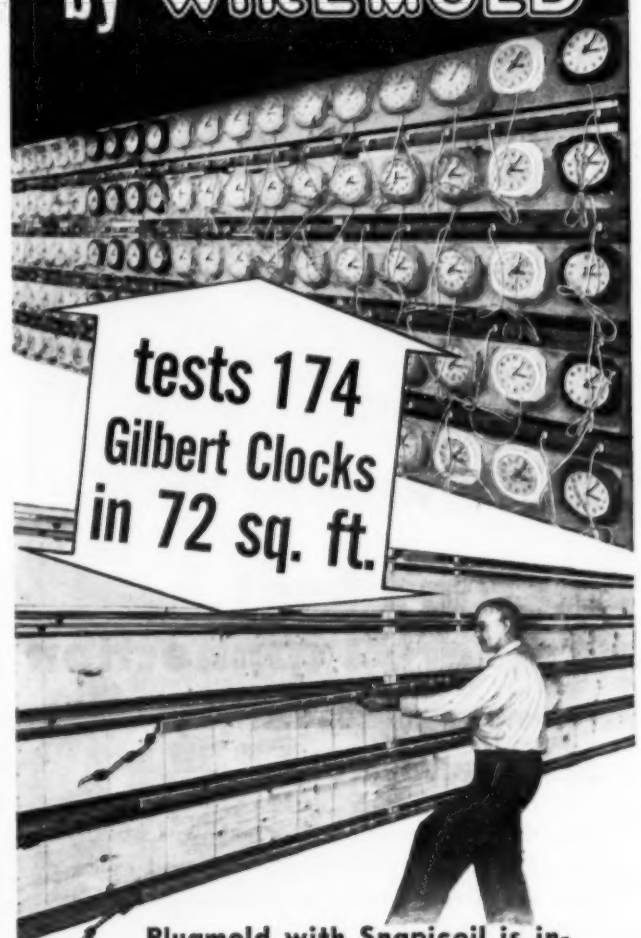
See how you can use glass in your products to replace costlier materials. How L·O·F Distributors can provide you with glass that's heat resistant, heat absorbent or heat insulating; electrically nonconductive *or* conductive; patterned or plain; flat or curved; transparent, translucent or opaque. Write for your free copy of SPD-53 today.

Libbey·Owens·Ford Glass Company, 9223 Nicholas Bldg., Toledo 3, Ohio.

LIBBEY · OWENS · FORD GLASS COMPANY

If you write maker identify as IEN - 1888

PLUGMOLD 2000
with SNAPICOIL
by WIREMOLD



Plugmold with Snapicoil is installed in one long run . . . No multiple connections between short lengths.

The Gilbert Clock Company of Winsted, Connecticut, found that, with Plugmold 2000, they could have duplex outlets on close centers . . . thus making it possible to utilize the available space on the clock-testing racks to best advantage, since TWO clocks can be serviced by only ONE duplex outlet. Plugmold with Snapicoil is *the modern way* for easier, faster and cheaper installation of multiple outlets.

Write today for the new, free Plugmold 2000 book!

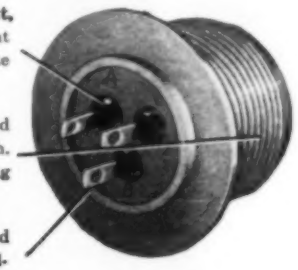
The WIREMOLD Company
Hartford 10, Connecticut

If you write maker identify as IEN - 1890

CANNON PLUGS *hermetically sealed*

Cannon Type "GS" (glass sealed) connectors are hermetically sealed for use on position indicators, tachometers, and other instruments that must be sealed to avoid moisture condensation resulting from sudden altitude change or other causes.

Glass beads fused to shell and contact, have approximately same coefficient of expansion as steel shell, insulate contact and provide perfect seal.



Shell machined from cold rolled steel. Hot tin dip is standard finish. GS02 is receptacle type; GS06 plug with coupling nut.

Contacts machined from cold rolled steel. Flat eyelet at wire end is standard. Solder cup type contact available on special order.

Request Bulletin No. GS-2 for engineering data.

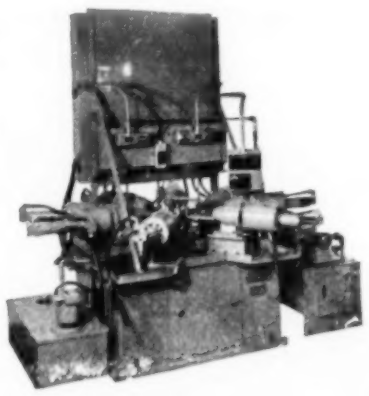
Dept. I-112

CANNON ELECTRIC

3209 Humboldt Street, Los Angeles 31, California. Canadian factory: Toronto, Ontario. World export: Frazar & Hansen. San Francisco, New York and Los Angeles.

If you write maker identify as IEN - 1891

New Machine Drills 3840 Holes Per Hour



Exceptionally fast drilling of 32 holes (3/16" diam.) in a steel part is made possible by this new machine which incorporates 8 Model HH Govro - Nelson Automatic Drilling Units, electrically interlocked with automatic, hydraulically operated clamping and indexing.

In operation, the operator places the part on a fixture and presses the start-cycle switch. The part is automatically clamped and 8 holes are drilled simultaneously at each of the four indexes, thus completing the 32 holes. Then the part is automatically unclamped. Output rate: Approximately 120 parts (3840 holes) per hour.

If you have similar operations, we shall be pleased to quote on a complete set-up. Literature sent upon request.

GOVRO-NELSON CO.
1933 Antoinette
DETROIT 8, MICH.

Automatic **DRILLING UNIT**

If you write maker identify as IEN - 1892

HOW TO SATISFY A CUSTOMER

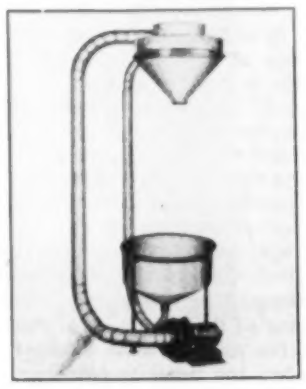
Package your products in Lermer Plastic durable, handsome containers. They are shatterproof, 75% lighter than glass, available clear or opaque in many colors, can be printed or decorated and are available with metal or plastic closures. Write for complete catalog information and samples. If possible, send along products for particular suggestions.

LERMER PLASTICS, INC.
Pioneers and Pacesetters in Plastic Packaging
518 South Ave., Garwood, New Jersey

If you write maker identify as IEN - 1893

CONVEYING . . Pneumatic equipment elevates granular plastics to hopper

Source: B. F. GUMP CO.
1313 S. Cicero Ave., Chicago 50, Ill.



plastic rides on air

New **adaptation** of the company's previously developed Air Elevator delivers granular plastic materials from containers at floor level to an overhead hopper serving a molding machine. The plastic is dumped into a hopper at the floor line. It feeds from there to the intake side of a motor driven blower for delivery, suspended in the blower air, to the overhead receiver.

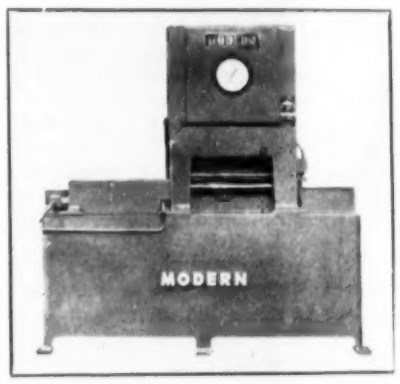
Air separates from the material in this receiver so the material can feed to the machine hopper while the air returns to the blower intake. An adjustable venturi controls the feed rate. Magnetic equipment can be installed to remove ferrous particles.

Standard rating is 1,000 lb. per hour. The standard assembly is recommended for a vertical lift to 20 ft. and horizontal run to 10 feet. Other sizes are subject to specification. The equipment is characterized by the ease with which it can be cleaned to permit changing colors. No particles remain in the receiving hopper to mix with the next batch.

If you write maker identify as IEN - 1894

TESTING . . Automatic machine pressure tests engine cylinder heads

Source: MODERN INDUSTRIAL ENGINEERING CO.
14228-32 Birwood, Detroit 4, Mich.



The operator watches

Cast iron cylinder heads to be tested for leakage are delivered to a transfer station on this new automatic machine from a conveyor line in which the machine is installed. A cycle start button is energized to cause a hydraulic cylinder to transfer the head to the test station where it is sealed in three planes by rubber-faced hydraulically operated pads that close up against it.

Pressure build-up between the pads and the work actuates start of an air test cycle to fill the head with a predetermined volume of air. Pressure loss over a specified test interval determines whether or not the casting is good or defective. A red light indicates work pieces that do not pass the test. A green light signals satisfactory ones.

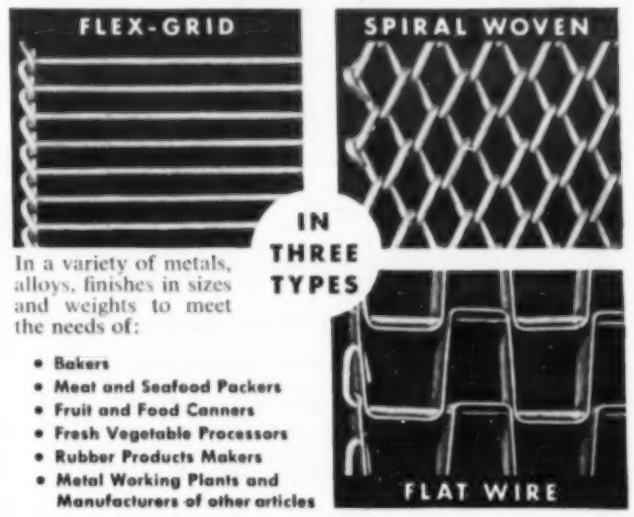
Upon completion of the test the work is ejected from the machine to the conveyor line and a new work piece takes its place. Power is supplied by a 3-hp. motor driving a hydraulic pump. Overall dimensions are 120 by 60 by 80 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1895

If you write maker identify as IEN - 1896

CYCLONE MAKES CONVEYOR BELTS



In a variety of metals, alloys, finishes in sizes and weights to meet the needs of:

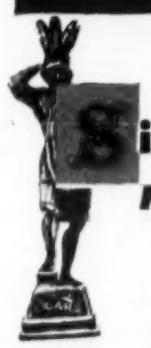
- Bakers
- Meat and Seafood Packers
- Fruit and Food Canners
- Fresh Vegetable Processors
- Rubber Products Makers
- Metal Working Plants and Manufacturers of other articles

Our technicians will be glad to work with you to help you select the belt which is best for *your* operation. Call our nearest sales office; or write Cyclone Fence, Dept. C-23, Waukegan, Illinois, for a free Conveyor Belt Catalog. There is no obligation.

CYCLONE FENCE DEPARTMENT
AMERICAN STEEL & WIRE DIVISION
UNITED STATES STEEL CORPORATION

UNITED STATES STEEL

If you write maker identify as IEN - 1897



Signs that show *NEW POSSIBILITIES FOR YOUR PRODUCT*

They're real stoppers! Printed in bright, glowing colors on flat VINYLITE Rigid Sheets, then heat-formed in one simple operation to interesting three-dimensional shapes. Their translucent areas can be illuminated.

They're easy to keep like new. A damp cloth cleans them. They retain their shape and dimensions.

They're durable. They resist cracking and fraying. They're light in weight and easy to handle, yet withstand the roughest treatment.

Available in a number of standard thicknesses, VINYLITE Rigid Sheets have the consistent uniformity that makes them easy to work with—to form precisely into intricate shapes. Their surfaces, matte, press polished, or a combination of both, accept printing in perfect register and retain a fine, clean, attractive finish. They're resistant to temperature, chemicals, humidity and aging.

Having the same properties as VINYLITE Resins and Plastics, they're perfect for scores of products—price tags, lamp shades, book bindings, drafting equipment. Write Dept. OV-3 for descriptive folder, or let us know of any problem you have which might be solved by the use of VINYLITE Rigid Sheets.

Signs made of VINYLITE Rigid Sheets by Mechtronics, Incorporated, Mamaroneck, N.Y.

Vinylite BRAND
PLASTIC SHEETS
TRADE MARK
BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.

If you write maker identify as **IEN - 1899**

New, easy-to-use

Allied Swivel Shoes

hold parts *rigid*... without marring surface!

Hundreds of uses for these uniform cost-cutters! Thousands now in use on drill jigs, shop tools, screw turrets, mill fixtures... *wherever parts or tools must be securely held without burring or marking the surface!* They hold parts tighter; make possible more accurate machining. Standardizing throughout the shop *eliminates costly on-the-job machining of special shoes!*

Their cost? Only a fraction of what they save the average shop in one hour's time! Hardened for long life, they *can be used on job after job!* Ask your distributor for Allied Swivel Shoes today!

TWO TYPES AVAILABLE: Hexagon Swivel: fits any size or type screw. Swivel Set: socket-head screw; 5/16", 3/8", 1/2", 5/8" and 3/4" diam. Any length.

Allied Swivel Shoes

ALLIED AIR PARTS • 662 No. Robertson Blvd. • Los Angeles 46, Calif.

If you write maker identify as **IEN - 1900**

HANDY TOOL LIFTS AND PULLS EASILY

'Tugit' makes light work of thousands of jobs. It is small, portable — works fast, smoothly at any angle in tight spots and the wide-open spaces. That is why the 'Tugit' Hoist is used for everything from holding material for welding to pulling tree stumps and stretching cable.

Want to move a load 3/32"—or 3/64"—at a time? Get a 'Tugit' Hoist! It has the powerful, easily controlled action made possible by spur gears, automatic load brake and anti-friction bearings. A pull of only 40 pounds on the lever moves one ton. Non-kicking handle assures safety.

The handiness of the 'Tugit' saves time, effort, money in all kinds of repair, maintenance, and installation work. One and two-ton sizes available. Write for a copy of Bulletin No. 388 for complete details about the 'Tugit' Hoist.

'TUGIT' ® **HOISTS**

MANNING, MAXWELL & MOORE, INC.
Muskegon, Michigan

Builders of "Shaw-Box" Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves and 'American' Industrial Instruments.

If you write maker identify as **IEN - 1901**

CHASE RED TYE Drawstring Bags

Ideal for mailing and storage of small parts and samples. Twin Mailers also available, with envelope for letter and strong cotton bag for part or sample. Sizes available for every need! For information on CHASE Red Tye Bags, mail coupon.

CHASE BAG COMPANY
309 W. Jackson Blvd., Chicago 6, Ill.
Yes, I am interested in Chase Red Tye Drawstring Bags. Please send details.

Name.....
Street Address.....
City.....*State*.....
Type of Business.....

SINCE 1847 **CHASE BAG COMPANY**

GENERAL SALES OFFICES: 309 W. JACKSON BLVD., CHICAGO 6, ILL.
20 BRANCHES AND SALES OFFICES STRATEGICALLY LOCATED

If you write maker identify as **IEN - 1902**

TIMING . . Elapsed time unit for precise interval measurement

Source: R. W. CRAMER CO.
49 Saybrook Ave., Centerbrook 5, Conn.

Differential drive

Synchronous motor in the body of this new Time Totalizer is gear connected to the "sun" gear of a differential mechanism. One of the differential members is geared to the two pointers on the double dial. The other terminates in a free gear. A solenoid operated pawl stops the free gear when the timer is energized and simultaneously releases the pointer gear so the pointers start moving without any lost motion in the mechanism.

Reverse action takes place, when the timer is deenergized at the end of the interval, to stop the pointer gear and release the free gear so the motor can continue to operate without driving the pointers. Two models provide scale divisions reading 0.01 sec. or min. for a total range of 60 sec. or minutes. Accuracy in each case is within 0.2 per cent. The meter type housing that encloses the mechanism is designed for panel installation or for application where space is limited. A start-stop finger lever, on the housing face, completes the assembly.

If you write maker identify as **IEN - 1903**

FLOORS . . Resurfacing material for brick, concrete, steel, wood

Source: MONROE CO.
10701-5 Quebec Ave., Cleveland 6, Ohio

Strong, resilient

Swift-Floor, the company's plastic floor resurfacing material, now contains a new mineral in the form of irregularly shaped crystals known as Cryptolite. These crystals pack together when the material is filled into a floor depression and tamped or rolled. They form a hard non-skid floor surface that will take heavy loads.

A patch is ready for traffic within a minute after the application has been completed. The material is supplied in drums ready to be shoveled into place and tamped, or rolled, after priming an old floor surface. The resulting surface is spark proof and can be cleaned readily.

Identify as **IEN - 1904**

Rectangular element, about 2 by 12 by 12 in., lowers into the hypo bath in a photographic film development room. It is an electrolytic element employing stainless steel plates on which silver deposits as it comes from the film. When the build-up is an eighth inch or so it is peeled off. Oscar Fisher Company developed the unit, offers it for $160, has made arrangement with Handy and Harman to purchase the recovered silver. The unit also preserves the chemicals in the bath so they do not require replenishing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1905**

Save Valuable Cutting Tools WITH WEBBER INDUSTRIAL FREEZERS

TRADE MARK REGISTERED

★ By the treatment of cutting tools in temperatures to —125°F., in Webber Industrial Freezers, plant supervisors in many of America's large industrial plants report that tool life has been increased as much as 490%. Much less set up time is required because tools last longer. Tools received from the manufacturer a trifle undersized are saved by cold treatment and extended tool life on extremely difficult jobs which a tool formerly served for only one cut has been materially increased. By the stabilizing of metals at —125°F., a permanent accuracy and stability which would be impossible otherwise is accomplished. This treatment performs in a matter of hours the equivalent of four to eight years of natural aging. There's a Webber Unit for every industrial need.

Write for new bulletin giving more complete information.

INDUSTRIAL FREEZER DIVISION
WEBBER APPLIANCE CO., INC.
8-2740 MADISON AVENUE • INDIANAPOLIS 3, INDIANA

If you write maker identify as **IEN - 1906**

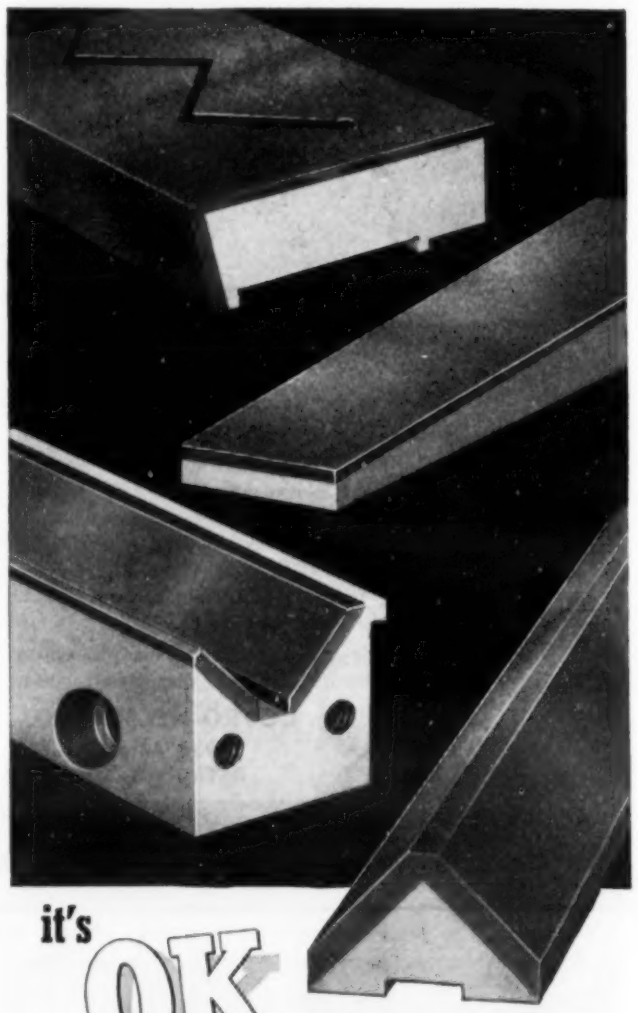
MILL IT *faster..* SAVE LABOR!

Kent-Owens advanced features mean *speed, accuracy* and *dependability*... in tool room or production milling. Rugged... simple in design and operation. Saves labor... reduces costs! Write for bulletins on wide range of hydraulic and hand-operated machines. Kent-Owens Machine Co., Toledo, Ohio.

No. 2-20 Milling Machine
Table, 42" x 12"
Table travel, 20"

KENT-OWENS
Milling Machines

If you write maker identify as **IEN - 1907**



it's OK let'em go with OK hardened ways, gibs, ball races, and Ampco bronze wear strips

The ultimate success and accurate life of your machine depends largely on the accuracy, and uniform high hardness of its ways, gibs, ball races or wear strips. OK parts are the finest. Made of special tool steel welded to a backing of soft tough steel under 2500 tons pressure, then hardened to a Rockwell C-65-66 and ground to tolerances of ± .00015 (both straight and parallel). Available in all sizes and shapes, to meet your particular requirements.

OK wear strips are also available in welded Ampco bronze. Because of the OK's special bi-metal method of welding, less bronze is required. Ways are ground to close tolerances thus reducing manufacturing and assembly time.

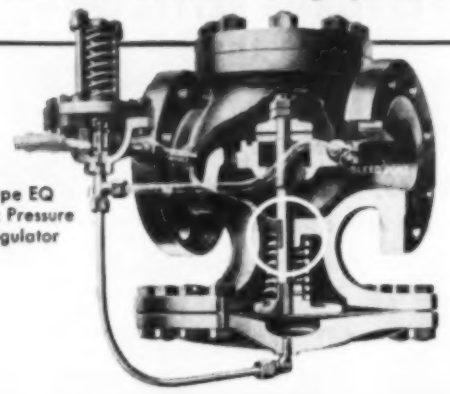
Manufacturers for the Metal Working Industry of Slitter Knives, Shear Blades, Rotary Shear Knives, Hardened Spacers, Hardened Ways, Gibs, Ball Races, Bronze Ways, and Wear Strips.

Write Dept. J for Bulletin

THE OHIO KNIFE CO.
CINCINNATI 23, OHIO

If you write maker identify as IEN - 1909

another SPENCE *design feature*



Type EQ Back Pressure Regulator

No Stuffing Boxes..

In Spence regulators all main valves and most pilots are built without stuffing boxes. This packless construction is made possible by the use of a large balanced metal diaphragm which eliminates the need for closely fitted parts. Result? More accurate regulation. • Valve stem wear is also reduced in the Spence packless design. Result? Low maintenance, years of trouble-free service • Write for Bulletin 500 giving full details of complete Spence line of automatic regulating valves.

SE-125

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

If you write maker identify as IEN - 1910

modernize materials handling with

CARGOTAINERS

Cargotainers are designed to keep pace with modern methods of materials-handling because they are: 1. Sturdy and resistant to shock; 2. Readily folded when not in use; 3. Open mesh so that contents may easily be seen for quick inventory; 4. Efficiently designed for shipment, assembly line use, and vertical storage. Write for information concerning the new CLEARVIEW model with its exclusive foot construction for greater durability and better locking and stacking. Dept. IEN, Pittsburgh Steel Products Co., Grant Bldg., Pittsburgh 30, Pa.

Pittsburgh Steel Products Company
A Subsidiary of Pittsburgh Steel Company

If you write maker identify as IEN - 1911

For BALL and PEBBLE Milling

Amazing Grinding Medium

BURUNDUM

- made of "ultra-high" fired ceramic
- tubular shaped for greater grinding area
- extra high specific gravity for faster action
- extremely hard for positive attrition
- long wearing for minimum contamination
- non-porous for easy cleaning
- for use in both wet and dry grinding
- 50% faster grinding than conventional media

Write, today, for bulletin and samples!

302C

U. S. STONEWARE
AKRON 9, OHIO • PROCESS EQUIPMENT DIVISION

If you write maker identify as IEN - 1912

TRUCK . . Locking box design handles garments and packages safely

Source: IRONBOUND BOX & LUMBER CO.
77 Hoffman Place, Hillside, N. J.

Available to order

Transfer Truk trade names a new steel reinforced door equipped box truck made of plywood. A rubber bumper surrounds all four sides a little above the bottom. The truck is mounted on rubber tired wheels. A locking lever anchors the two doors at the top and bottom and also provides means to seal against pilferage.

The interior is sufficiently wide and high to hang garments full length from a bar that is provided for this purpose. A belt is anchored to the truck to hold the garments in place during shipment. A hinged shelf can be raised into carrying position, about half way between the top and bottom, to pile packages. A shipping receipt holder is on the door.

If you write maker identify as IEN - 1913

SIGNALING . . Electric bell, single stroke or continuous, to 10 in.

Source: PARTRICK & WILKINS CO.
49-53 N. 7th St., Philadelphia 6, Pa.

List price $17 to $37

No. 1800 designates a new single stroke bell for operation on ac. or dc. in code calling service. No. 1900 is a continuously ringing vibrator operated ac. bell for general purpose application. Both are available in four diameters, from 4 to 10 in., to operate on 24, 110 or 220 volts. The vibrating unit also is made in a cow gong assembly measuring 3⅛ by 5 inches. Standard finish is rust proof steel gray. Application is by surface or semi-flush mounting.

If you write maker identify as IEN - 1914

TESTING . . Ultraviolet fixture to inspect in the 3660 angstrom range

Source: COOPER HEWITT ELECTRIC CO.
722 Grand St., Hoboken, N. J.

Uses Corning filter

A sealed beam from a quartz high pressure mercury arc tube provides the correct wave length for Black Light inspection purposes in this new fixture. It is available for flood or spot focus. The swivel arm permits setting and adjustment universally. Application is in fluorescence analysis and examination of raw and processed materials in production and laboratory operations.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1915

Type 1 for steel

Type 23 for die castings

FREE!

TEST OFFER PROVES

NO TAPPING WITH

SHAKEPROOF
T. M. REG. U. S. PAT. OFF.

THREAD-CUTTING SCREWS

They actually cut their own mating thread in metal or plastic . . . just drill and drive! Because each screw remains in its own self-cut thread . . . tighter, stronger fastenings are certain!

SEND FOR FREE TEST KIT OF TYPE 1 OR TYPE 23 AND 25 NOW!

Type 25 for plastics

SHAKEPROOF inc.
"Fastening Headquarters"
TRADE MARK
A DIVISION OF ILLINOIS TOOL WORKS
2501 North Keeler Avenue, Chicago 39, Illinois

If you write maker identify as IEN - 1916

TO THE INGENIOUS

Not familiar with this

NEW INDUSTRIAL TOOL

Free Sample of Fullergript Brush Strip

What problems can you solve by adapting Fullergript to your equipment?

This brush strip can be coiled or twisted into numerous shapes. It can be formed to give intermittent or continuous brushing action. It adapts to stationary or power driven applications. How it may help *you* is a matter of your own ingenuity – plus the services of the Fuller Brush Engineering Dept. Find out what Fullergript can do by sending for a sample strip. We will also send a booklet showing its versatility. Simply write today to The Fuller Brush Company.

INDUSTRIAL Fuller BRUSH CO. DIVISION

3583 MAIN STREET • HARTFORD 2, CONN.

Power driven brushes, Factory & Institutional cleaning tools, Waxes & Detergents

If you write maker identify as IEN - 1917

WATCH OUT, ALFONSO, ONE TUMBLE'S ALL IT TAKES...

Indifference can quickly spoil a hard won reputation for quality performance. You don't take chances when you stick to a solder you know and trust . . . time-proved Kester Solder, constant in solder alloy and always consistent flux formulae.

WRITE TODAY *for your free copy of the Kester Technical Manual, "SOLDER and SOLDERING Technique."*

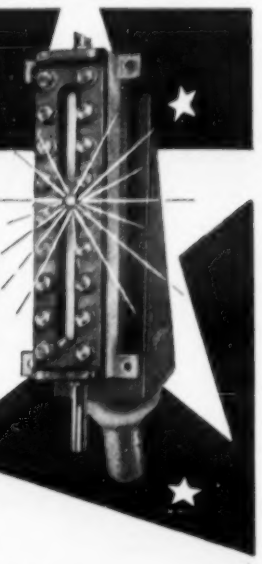
KESTER

SOLDER COMPANY
4211 Wrightwood Avenue • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

If you write maker identify as IEN - 1918

BOILER WATER LEVEL

Shines like a Star



With NEW YARWAY ILLUMINATOR

Get *positive* water gage readings. New Yarway illuminator spots meniscus at any point in its range. Superior penetration of blue-white light cuts through foreign deposits on gage glasses, extraneous light and dust particles. Use on new or already-installed Yarway Flat Glass Gages. Full details on request.

Yarnall-Waring Co., 122 Mermaid Ave., Phila. 18, Pa.

YARWAY

Branch Offices in Principal Cities

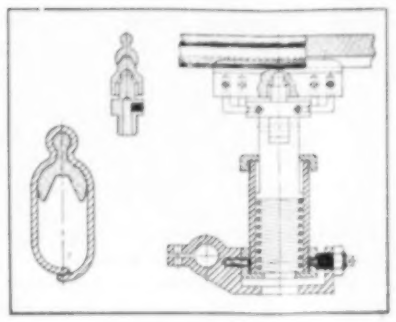
If you write maker identify as **IEN - 1919**

If you write maker identify as **IEN - 1920**

If you write maker identify as **IEN - 1922**

ELECTRIC DUCT . . With trolley to convey current to moving equipment

Source: UNIVERSAL-STANDARD INC.
631-35 Washington Road, Pittsburgh 28, Pa.



Details upon request

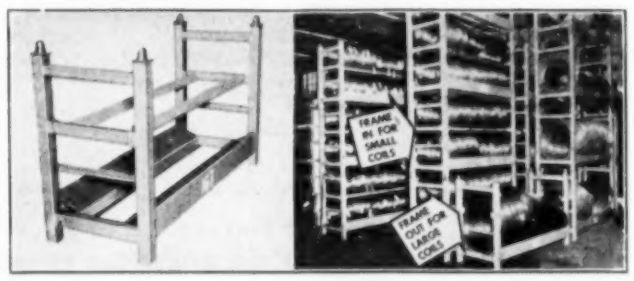
Illustrated is typical assembly of new equipment the company is prepared to supply to provide protected installations of current carrying conductors and movable trolley shoes to supply current to equipment such as cranes, moving bridges, monorail equipment, portable tools in a capacity range between 50 and 2,000 amperes. The conductor is enclosed within an insulating sleeve, split at the bottom to provide for entrance. It surrounds a trolley shoe supported on a ball joint for flexible action.

The shoe is made of copper alloy that matches the conductor, the latter serving as a guiding track as well as the means to conduct current. The shoe is spring supported to compensate for vertical irregularities. The company is prepared to supply the equipment for specified installation.

If you write maker identify as **IEN - 1923**

STORING . . Tubular steel rack to stack coils of wire or strip metal

Source: EQUIPMENT MFG. CO.
21548-52 Hoover Road, Detroit 5, Mich.



Sizes and capacities to specification

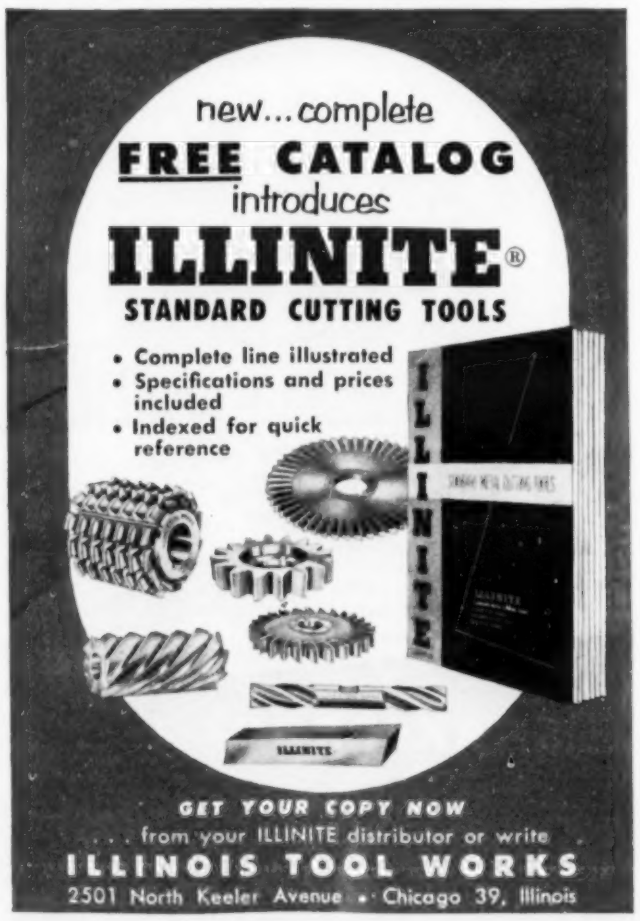
Steel tube in square cross section makes up the main frame of this new stacking rack. The assembly includes a V-shaped bottom and a removable center tray or shelf. This removable portion is left in place to handle small coils. It is removed when large coils are to be stored. The rack can be handled with a fork truck. Lifting eyes are available to attach from overhead. Nesting pins at the top permit stacking.

Identify as **IEN - 1924**

Machine guards that will not rattle, that are strong, light and inexpensive are available to order from Bassons Industries in New York City. The company started by making the guards for its own use. Each is molded from styrene sheet stock in a low-cost process.

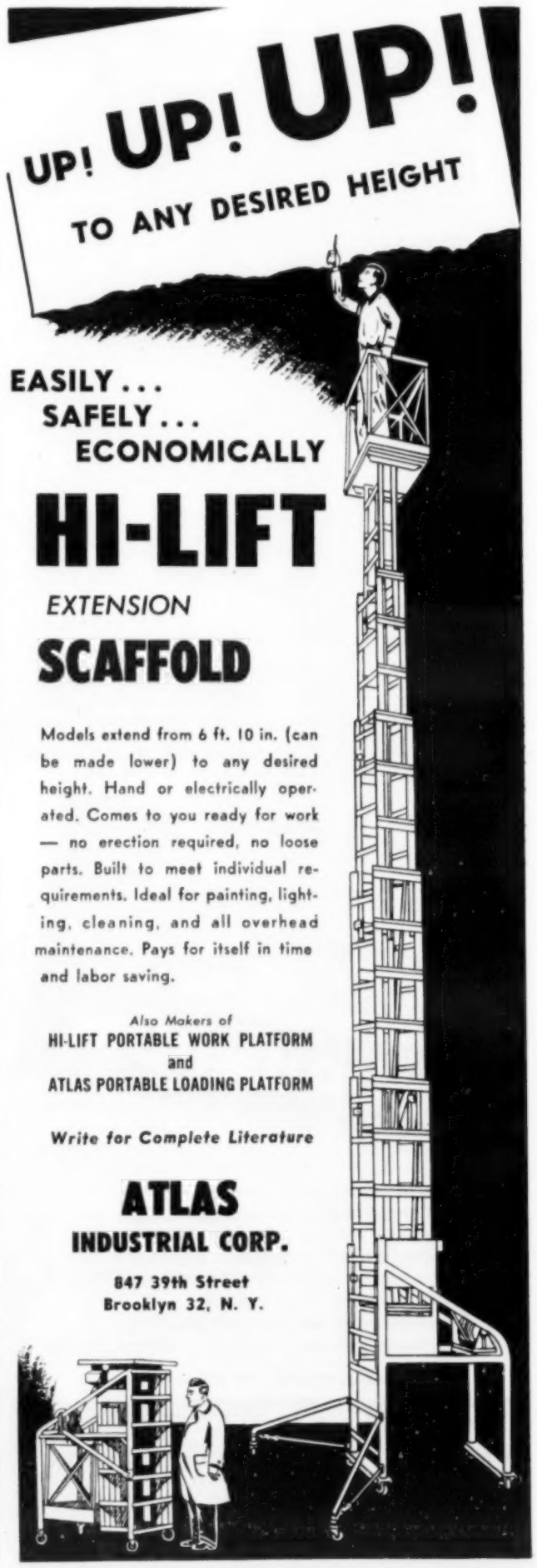
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1925**



If you write maker identify as **IEN - 1926**

If you write maker identify as **IEN - 1927**



If you write maker identify as **IEN - 1929**

MYSTIK BRAND TAPES · SELF-STIK

14 Colors!

To identify . . . code . . . decorate . . . trim

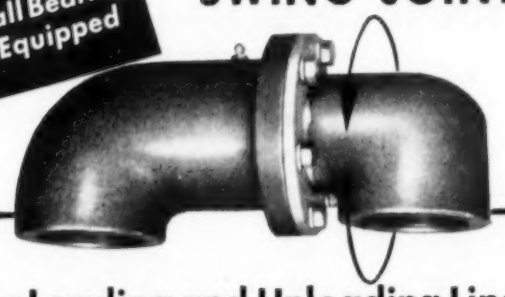
Self-Stik Mystik® Brand Cloth Waterproof Tapes are available in 14 colors . . . *white, black, red, green, blue, yellow, brown, wine, pink, tan, gray, light blue, light green* and *olive drab*. No other tape offers this range of colors to multiply the many uses in your operations. Takes the place of permanent painted stripes, decorations, on many products. Makes decorative hinges, bindings. Write for information and free samples. Mystik Adhesive Products, 2644 North Kildare Avenue, Chicago 39.

© Mystik Adhesive Products, 1952 Trademark Mystik Registered.

If you write maker identify as **IEN - 1930**

NEW! Ball Bearing Equipped

BARCO SWING JOINTS



for Loading and Unloading Lines

BARCO'S new, attractively priced, all-steel ball bearing *Swing Joints* are specifically designed to provide for movement and flexibility in metal pipe loading and unloading lines handling gasoline, oil, alcohol, chemicals, and other fluids.

11 DIFFERENT STYLES—Barco offers single swing, double swing, and counterbalance styles to meet every need. Sizes 2", 2½", 3", 4".

SUPERIOR DESIGN—The ball bearings will not fall out when joints are taken apart. Long bearing provides adequate pipe support. Special O-ring seal insures leakproof service over wide temperature range, −40°F to +225°F.

INFORMATION—Send for latest Catalog No. 400 and engineering information. BARCO MANUFACTURING CO., 1838 C Winnemac Ave., Chicago 40, Ill.

If you write maker identify as **IEN - 1931**

NEW SEALER HOLDS THEM!

Prevents Leaks . . . Protects Surfaces

This newly-developed polyhydroxylated plastic sealer adheres to any surface. Does not become hard or brittle. Holds at joints under 2,000 lbs. pressure. Holds even at 400 degrees F. Use as a protective coating or as a pipe joint compound. Holds these chemicals and many others:

Dries but doesn't harden. Stays flexible.

- → VARSOL
- DRIP OIL
- CARBON TETRACHLORIDE
- → TRICHLORETHANE
- CHLOROBENZENE
- ETHYLENE DICHLORIDE
- → TRICHLORETHYLENE
- TRICHLOROBENZENE
- BENZENE
- → XYLENE
- BUTANE
- PROPANE
- → HEXANE
- PETROLEUM NAPTHA
- SILICONE OILS
- → PETROLEUM OIL
- TOLUOL
- GLYCERINE
- → SULPHUR DIOXIDE
- → WATER
- "FREONS"
- METHYLENE CHLORIDE
- → METHYL CHLORIDE
- PERCHLOROETHYLENE
- ORTHO-DICHLOROBENZENE
- → CUMENE
- CYMENE
- GASOLINE
- → JET ENGINE FUELS
- FORMALDEHYDE
- VEGETABLE OILS
- → KEROSENE
- COAL TAR CHEMICALS
- PAINT SOLVENTS
- → MOST NON-POLAR SOLVENTS
- CHLORINATED SOLVENTS
- AROMATIC SOLVENTS
- → AMMONIA

Leak Lock Comes in 1⅛ oz. tubes (dozens), pint cans and 10 lb. cans. Order from Highside Chemicals Co., 10 Colfax Ave., Clifton, N.J.

1. USE AS A PIPE JOINT COMPOUND . . . .

2. USE AS A PROTECTIVE COATING . . . . .

If you write maker identify as **IEN - 1932**

PRESS . . Motor driven, 10 ton, has 24 in. throat and 2 in. stroke

Source: WHITNEY METAL TOOL CO.
96-100 Forbes St., Rockford, Ill.

Model 150 is a new deep throat design in the company's line of motor driven punch presses. It is designed to operate at 175 strokes per minute and is assembled with the flywheel at the rear to provide clear space on the front and both sides. The new machine supplements the previously designed presses with 12 and 18-in. throats and 1¼-in. stroke.

If you write maker identify as **IEN - 1933**

CONTROL . . Magnetic amplifier now available in five stock assemblies

Source: KEYSTONE PRODUCTS CO.
902-6 23rd St., Union City, N. J.

Technical data upon request

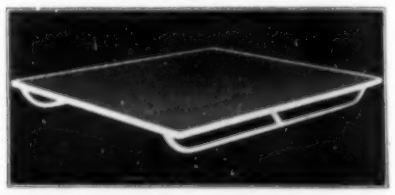
Moto-Mag trade names a new amplifier that is now being built to stock in five designs. Typical of the line is a unit known as KP10-400. It operates from an input of 115-volt, 400-cycle single-phase ac. and provides an output of 10 watts in reversible phase. Temperature range is between minus 55 and plus 70 deg. C. Minimum variation and input signal of 2 volt ac. or dc., working into a high impedance, is required for a maximum of 110-volt 400-cycle output of 10 watts.

Each assembly is hermetically sealed and has its own built-in power supply providing the required plate and filament voltages to its demodulator. Overall dimensions of the KP10-400 are 3½ by 2½ by 4 inches. Weight is a little under 2 pounds. Each assembly employs a phase sensitive vacuum tube, demodulator and magnetic amplifier output stage. No rectifier is required for the equipment.

If you write maker identify as **IEN - 1934**

HANDLING . . Steel frame pallet in specified sizes and load ratings

Source: ECONOWELD CO.
1803-7 Webster St., Dayton 4, Ohio



Patent applied for

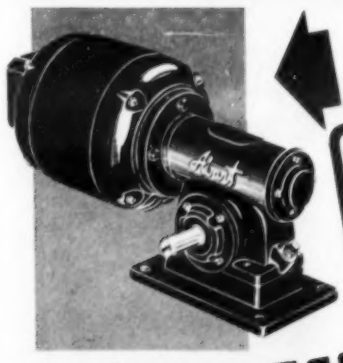
Skid runners made of steel tube are welded and brazed to a rectangular angle iron frame that encloses a laminated wood deck in this new light weight pallet. It is designed to compete directly with pallets made entirely of wood. It is lighter in weight than the wood assembly. It stacks and handles readily, can be picked up from most any position. Its life in test service is about 10 times that of wood.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1935**

Find out WHY more and more

MODERN DESIGNers



choose ABART GEARMOTORS

Abart Gearmotors are available with output speeds as low as 17½ R.P.M., 1/6 to 5 h.p., ratios 5-4/5 up to 100 to 1.

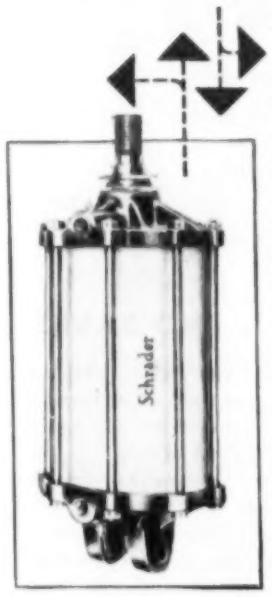
SEND TODAY FOR THIS HANDY, "POCKET-SIZE" CATALOG

For production machinery or adaptations of speed reduction for special equipment—modern designers find that their job is simplified with ABART GEARMOTORS. You, too, can get the same results, satisfaction and national service with Abart.

Abart GEAR & MACHINE CO.
4823 WEST 16th STREET • CHICAGO 50, ILLINOIS
Mfrs. of Gears, Speed Reducers and Gearmotors

If you write maker identify as **IEN - 1936**

Let Schrader Air Cylinders shoulder your work load



There are hundreds of places in your plant where you can speed up production and reduce fatigue. Look around—you can undoubtedly find many places where manual lifting, lowering, pushing or pulling is slowing up production. That's where you need Schrader Air Cylinders.

Available for pushing, pulling, lowering or lifting—with or without cushion—Schrader Air Cylinders and Operating Valves are made in sizes and mountings to meet your needs. Write for the Schrader catalog, which gives a full description.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-43, Brooklyn 38, N. Y.

If you write maker identify as **IEN - 1937**

Yes, B&W Kaocast is versatile. This 3000F refractory castable speeds repairs . . . eliminates need for large inventory of special shapes. Discuss easy-to-use Kaocast with your B&W Refractories Engineer.

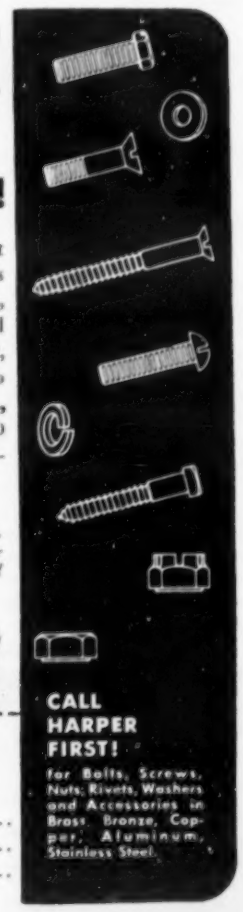
THE BABCOCK & WILCOX CO.
Refractories Division
GENERAL OFFICES: 161 EAST 42nd ST., NEW YORK 17, N. Y
WORKS: AUGUSTA, GA. R-418

If you write maker identify as **IEN - 1938**

HARPER

Specialist in *all* Non-Corrosive Fastenings!

Call Harper *first!* America's largest producer of non-ferrous and stainless steel fastenings—specializing in bolts, screws, nuts, rivets, washers and accessories in brass, bronze, copper, aluminum, Monel, stainless steel—to solve your problems in corrosion, heat, abrasion and stress. Over 7,000 items stocked by warehouses and distributors from coast to coast.



FREE—*this 56-page Harper Price List and Stock Book.*

HARPER
EVERLASTING FASTENINGS

The H. M. Harper Company
8211 Lehigh Ave.,
Morton Grove, Ill.
Rush Harper Price List and Stock Book.
Name.....
Address.....
City.....State.....

CALL HARPER FIRST!
for Bolts, Screws, Nuts, Rivets, Washers and Accessories in Brass, Bronze, Copper, Aluminum, Stainless Steel.

If you write maker identify as **IEN - 1939**

Don't just write— Specify JENKINS Gold Seal Tape

FRICTION . . . RUBBER

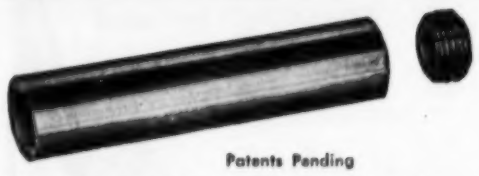
. . . AND SAVE!

Every roll of Jenkins Gold Seal Tape goes further. It tapes up tight to the last inch . . . doesn't peel, dry out or ravel . . . one thickness insulates . . . sticks to the job under toughest conditions of heat, cold, moisture. Single rolls or 10-roll containers. Jenkins Bros. (Rubber Div.), 100 Park Ave., New York 17.

MADE BY JENKINS BROS. • MAKERS OF FAMOUS JENKINS VALVES

If you write maker identify as **IEN - 1940**

How SQUARE HOLED SLEEVES SPEED UP TOOL-MAKING!



Patents Pending

One of the most difficult problems in tool making can be solved easily and quickly with Sturdy Square Holed Sleeves. The perfection of broached square holes can be had in boring bars, milling cutters and many other applications at a small fraction of the cost of imperfect hand-made square holes. The sturdy Square Holed Sleeve consists of a round sleeve with a perfectly square hole broached through the center. This hole is tapped at one end to receive a back-up screw which is furnished with the sleeve. The sleeve can be sweated or pressed into a drilled and reamed hole to make a perfectly square accurate hole in a very few minutes.

The Sturdy Square Holed Sleeve will save you many hours and many dollars in the making of boring bars, tool holders and other tools requiring square holes.

SLEEVES MADE IN FOLLOWING SIZES:
3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 1"

Write for Literature

STURDY BROACHING SERVICE
23516 TELEGRAPH ROAD, DETROIT 19, MICH.

If you write maker identify as **IEN - 1941**

SAVE TIME AND MATERIALS

Oil-hardened tool steel tapered pin gages accurate to + 0.0001" − 0.0000" insure dependable sizing and location of holes and slots for machinists, setup men, tool and die men, inspectors, all who need precise hole measurement.

CONCENTRIC TAPER on lower half of each gage fits holes 0.0012" smaller than standard letter, fraction, and number size drill holes. Makes insertion easier. Permits gaging of odd-size holes and slots.

ALL GAGES are 1½ inches long. Sets contain a pair of each size in a plastic case with 4-place decimal equivalents of each size plainly marked.

ALL ITEMS STOCKED FOR IMMEDIATE DELIVERY

THE Horberg GAGE COMPANY
31 STAPLES ST., BRIDGEPORT, CONN.

Quantity
..... Letter sets @ $45. 52 gages (A-Z)
..... Fraction Sets @ $50. 60 gages (1/64" to 1/2" in 1/64" steps)
..... Number Sets @ $90. 120 gages (1 to 60)
..... Single gages @ $ 1.
..... Stand alone @ $10.

Please Rush checked items and literature to
company .....
address .....
name .....
title .....

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Each includes identification, size of the material, information it contains so you can judge its value to you.

Identify as **IEN - 069**

SPLICELESS V-BELT . . Heavy endless rayon cords float in a cushion of rubber in Texrope grommet V-belt. Construction features, stated in 4-page Bulletin 20-B-6497A, make it shock absorbent, shrink and stretch resistant. Allis-Chalmers Mfg. Co., 909 S. 70th St., Milwaukee 14, Wis.

Identify as **IEN - 070**

V-BELT DRIVES . . 36-page catalog with list prices on fractional-hp. and multiple V-belts, "Beltply" link-type V-belting, single and multiple sheaves, flat-belt pulleys, drive and conveyor chain. Catalog R-103-A. Rockwood Pulley Mfg. Co., 18-22 Crosby St., New York 13, N. Y.

Identify as **IEN - 071**

BURRING . . Ground cutters and rotary files in both carbide and high-speed steel, also miniature cutters, end mills, chatterless countersinks. Recommended operating speeds and actual-size illustrations are in 12-page Catalog 207. M. A. Ford Mfg. Co., 705 W. River St., Davenport, Iowa

Identify as **IEN - 072**

CENTRIFUGAL CASTINGS . . Made in non-ferrous alloys to a maximum of 10½ in. o.d. and to 24 in. in length. Compositions of 19 alloys and notes on production service are in 4-page folder, illustrated with application examples. Sorensen Industries, 11 Darby Road, Darby, Pa.

Identify as **IEN - 073**

CHEMICALS . . Oxidation inhibitor for magnesium casting, purifying or melting flux for aluminum, grain-refining agent for light metals are some of the uses for fluorine-boron salts in 4-page "Alkali Fluoroborates." General Chemical Div., 40 Rector St., 8th Floor, New York 6, N. Y.

Identify as **IEN - 074**

VACUUM CLEANING . . Dry pickup from pipes and walls, wet pickup from floors can be made with portable electric suction cleaners and available attachments shown in new 6-page Folder 521 on Models WD-15 and WD-23. Clarke Sanding Machine Co., 28 E. Clay Ave., Muskegon, Mich.

Identify as **IEN - 075**

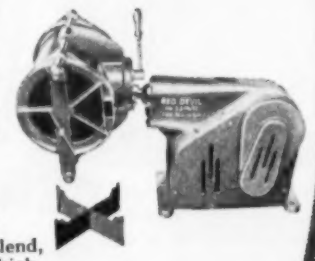
CLEANING MACHINE . . Pump-tank solution-feeding unit washes wall and ceiling surfaces by means of trowel pads; it requires no power. "Wall Washing Machine," 4 pages. Ross & Story Products Corp., 703-9 Dewitt St., Syracuse 3, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1942**

better paint job with Red Devil Paint Conditioner

Paint pepped up by Red Devil Paint Conditioners goes on more smoothly, and better protects your product. Patented 3-directional motion puts pigment in perfect suspension —quick!



NOT JUST PAINT

Manufacturers of everything from printers' ink to putty use these machines to mix, blend, and rejuvenate all kinds of high-viscosity and low-viscosity mixtures.

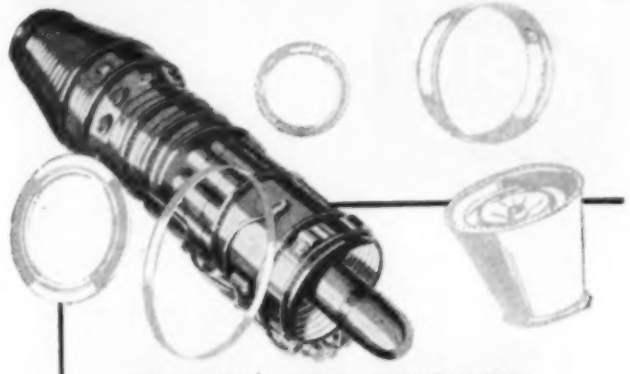
If you have hard-to-mix, *or hard-to-keep-mixed blends,* Red Devil can arrange to have test samples agitated at a nearby location.

Various models provide automatically-timed agitation for ¼ pint to 5 gal. cans. Attachments for round and square containers.

Red Devil Catalog No. 21M lists all Red Devil three-way agitators and Red Devil floor maintenance machines. Write Red Devil Tools, 129 Coit Street, Irvington, New Jersey.

Products of 1868 — Red Devil Tools. 129 COIT ST. IRVINGTON 11, N. J. U. S. A.

If you write maker identify as **IEN - 1943**



EVERY* JET ENGINE MANUFACTURER USES "AMERICAN WELDED" COMPONENT PARTS

Welding is our business . . . 33 years' experience . . . complete designing, engineering and metallurgical service.

This is what we offer you if your requirements involve either fusion or resistance welding of either ferrous or non-ferrous metals.

Drop a line to our Product Development Division for our new illustrated catalog which will give you a look at our plant, facilities, and what we do.

* United States

THE AMERICAN WELDING & MFG. CO.
160 DIETZ ROAD • WARREN, OHIO

If you write maker identify as **IEN - 1944**

You can provide easy mobility to a variety of industrial products with

IRONBOUND ALL-PURPOSE HANDLING UNITS . . .

POPULAR IRONBOUND FLO TRUK

• An easy to handle ruggedly constructed unit for carrying bulky and heavy loads at lowest cost. Seven standard sizes with one or two push handles makes it easy to select the proper truck for your requirements. Ask an Ironbound engineer for suggestions.

The HANDY for furniture and similar items.
The HAULER for cases, crates, tote boxes, etc.
The HUSKY for general use throughout the plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

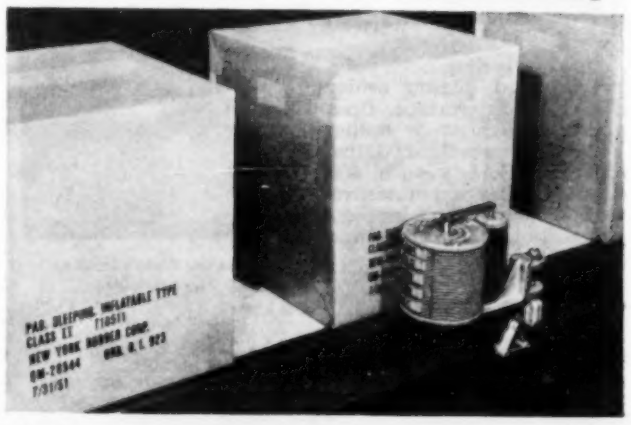
Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as **IEN - 1945**

Low-cost conveyor attachment marks cartons, cases automatically



Save man-hours now used for manual marking. Attach a ROLACODER Imprinter to conveyor or case-sealer and eliminate the cost of stencilling or rubber-stamping. Get neater, cleaner, more accurate marking, too. Friction-operated, self-inking. Copy changes made in minutes. *Pays for itself in weeks.*

Write for ROLACODER brochure showing models to imprint top, sides of every kind of package.

ADOLPH GOTTSCHO, INC.
Hillside 5, N. J.

Gottscho

If you write maker identify as IEN - 1946

Read the facts about AIRCO'S NEW No. 20 RADIAGRAPH

. . . So you'll know about the first gas-cutting machine designed to carry Aircomatc,® Heliwelding, and other *fabrication* equipment . . .

. . . So you'll be among the first to know how the No. 20 Radiagraph cuts circles, arcs, any length straight lines, simultaneous parallel line – with single or double bevels, and irregular shapes . . .

. . . So you'll know how this 57-lb. one-man portable can be put to work for you, just write us today for your copy of the No. 20 Radiagraph Catalog. Address: Advertising Department, Air Reduction Sales Company, 60 East 42nd St., New York 17, N. Y.

AT THE FRONTIERS OF PROGRESS YOU'LL FIND AN AIR REDUCTION PRODUCT

AIRCO

AIR REDUCTION

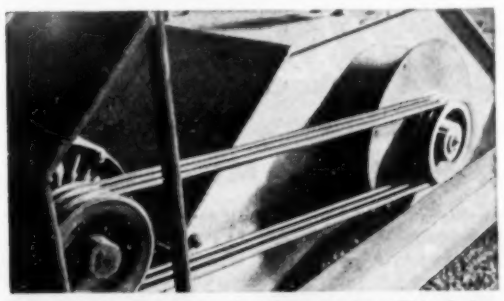
AIR REDUCTION SALES COMPANY · AIR REDUCTION MAGNOLIA COMPANY
AIR REDUCTION PACIFIC COMPANY
REPRESENTED INTERNATIONALLY BY AIRCO COMPANY INTERNATIONAL
Divisions of Air Reduction Company, Incorporated
Dealers and Offices in Principal Cities

If you write maker identify as IEN - 1947

How long can U. S. Rubber V-belts take this shock treatment?

Working on a coal car shaker is probably one of the worst shock loads V-belts are called upon to take. With every revolution they must transmit the power to shake a loaded coal car with sufficient force to loosen tons of packed or frozen coal. Yet this matched set of "U.S." Rainbow V-belts has been working steadily on this shaker for more than 10 months. Previously, three other brands of belts had lasted an average of three weeks apiece. Moreover, the "U.S." belts never jump the pulleys as did the other brands that were tried.

Installing "U.S." V-belts always results in extra operating profit because "U.S." belts are built to handle *extra-rugged* conditions. They have the unique Equa-Tensil Cord Section – a development which makes certain that each cord pulls its *full* share of the load. For more information, write to address below.



Two views of drive of coal car shaker. This shaker handles over 30 cars a day, is equipped with a matched set of three C-144 super-service V-belts.

Product of U.S. RUBBER SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
Mechanical Goods Division, Rockefeller Center, New York 20, N. Y.

NEW LITERATURE—Continued

Identify as IEN - 076

COATING . . Machines to use with hot or cold glues, latex, varnishes, lacquers, resins, paints, thermoplastics, primarily for sheet materials and containers, are reviewed in 4-page Bulletin GC as data summaries. Potdevin Machine Co., 283-87 North St., Teterboro, N. J.

Identify as IEN - 077

ELECTRIC CORDS . . Flexible jacketed cables for portable tools and appliances are presented by 24-page Catalog FC-52 in a manner to assist your selection. Each of several types is classified by service, jacket, construction and conductor, application. This is followed by current capacities and other numerical data based on new Underwriters' classifications. Whitney Blake Co., 53 Thomas, New Haven 14, Conn.

Identify as IEN - 078

LIQUID LEVEL CONTROL . . Selecting the right instrument for the application is covered in an introductory section in revised 24-page Bulletin 392-3. Continuous purge, diaphragm box, float-and-cable types for open vessels, together with differential-pressure types for closed vessels, follow in the text with little operating schematics on each major type. Foxboro Co., 42 Neponset Ave., Foxboro, Mass.

Identify as IEN - 079

PROCESS CONTROL . . Time-cycle instrument with impulse-sequence operation is shown in schematic "how-it-works" drawing by new 12-page Bulletin C-305 along with details. Bristol Co., Griggs & Kelsey Sts., Waterbury 20, Conn.

Identify as IEN - 080

PROCESS CONTROL . . Announcement of a new engineering service to design, build and install instruments and equipment for industrial process control. Four-page bulletin gives details. Equipment & Controls Engineers Inc., 810-14 Noblestown Road, Pittsburgh 5, Pa.

Identify as IEN - 081

GRAVITY CONVEYORS . . Roller, staggered-wheel and side-wheel types to handle a variety of loads are presented in 16-page "Gravity Conveyors" catalog. Food Machinery & Chemical Corp., 3073-77 12th St., Riverside, Calif.

Identify as IEN - 082

BELT CONVEYORS . . Tubular truss frame of Marco bulk-material-handling conveyors is strong, rigid, resistant to misalignment. Eight-page Bulletin SF-1 gives details. E. F. Marsh Engineering Co., 4053 Chouteau, St. Louis 10, Mo.

Identify as IEN - 083

CRANES . . Double-girder electric traveling cranes in standardized construction for average industrial service, 1 to 20 ton. Catalog 221, 28 pages. Manning, Maxwell & Moore Inc., 408 Broadway, Muskegon, Mich.

Identify as IEN - 084

CUTTING TOOLS . . 48-page price list, "Illinite 101," on standard metal-cutting tools including end mills, slitting saws, milling cutters, hobs, shaper cutters, tool bits. Illinois Tool Works, 2503 N. Keeler Ave., Chicago 39, Ill.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1949

FAIRBANKS® ALL-STAR TEAM

If you write maker identify as IEN - 1950

KLIXON Thermo Snap CONTROLS

Can Solve Your Temperature Control Problems...Reduce Costs, too!

What's your temperature control problem... low and high limit controls, full delay switches, tube and rectifier cooling, fan switches, temperature control ... Klixon Thermo-Snap Controls are meeting the requirements for these and other applications, daily.

These versatile thermostat controls are widely used in both military and civilian products ranging from airplanes, tanks, industrial apparatus, furnace fans to unit heaters and domestic appliances.

Klixon Thermo-Snap Controls are available in many hermetically sealed and open types in a wide variety of operating temperature ranges.

Klixon Engineers, specialists in temperature control applications, can help you solve your specific problems. Write for their help or further information.

SPENCER THERMOSTAT
Division of Metals & Controls Corporation
202 Forest St., Attleboro, Mass.

KLIXON

If you write maker identify as IEN - 1951

Improved Method Centrifugal SPRAY DRYER and CONCENTRATOR*

CONTRACT DRYING
We invite inquiries for Contract Drying in our fully equipped, Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form, including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooler and Sanitary Pumps with variable speed drives for handling the liquid material and controlling the moisture.

*CONCENTRATOR AVAILABLE SEPARATELY

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining neutral flavors and vitamins.

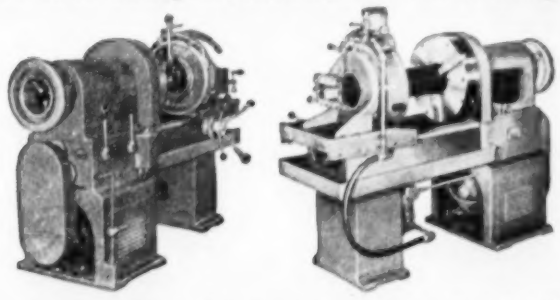
363R

DRYING and CONCENTRATING CO.
232 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

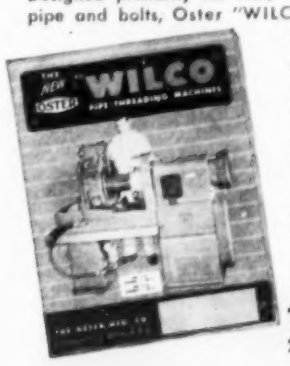
If you write maker identify as IEN - 1952

OSTER

"WILCO" PIPE MACHINES for low cost, maintenance threading



Designed primarily for fast, low cost maintenance threading of pipe and bolts, Oster "WILCO" machines are also used for production threading.



Cutting-off speed is approximately three times threading speed. A single die-head covers the entire range of each "WILCO" machine.

No. 714 "WILCO" standard range: 1" to 4" pipe; extra range ½" and ¾" pipe; bolt range ¾" to 3". No. 716 "WILCO" standard range: 1" to 6" pipe; bolt range 1" to 4".

Write for new "WILCO" Bulletin!

THE OSTER MFG. COMPANY
2053 E. 61st St., Cleveland 3, Ohio, U.S.A.

If you write maker identify as IEN - 1953

FREE...

New Bulletin #1052 gives you complete specifications and facts about all Keller's ten models and accessories . . . and especially features the

GREATER CAPACITY of the NEW No. 5

KELLER Power HACK SAW

Has 9" x 9" capacity.

Saws all types of metals from thin tubing to solid bars quickly with a neat, accurate cut. Variable pressure feed control of 0 to 200 lbs. minimizes wear on saw blades. Quick acting swivel vise turns to 45° angle. Equipped with Oilite bearings throughout.

Write for FREE bulletin and get all the facts.

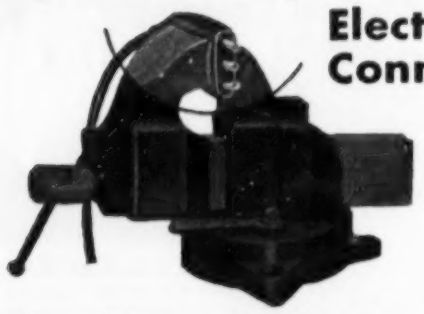
Sales Service Machine Tool Co. SSMT

PRESS RITE PRESSES • SHAPE RITE SHAPERS • KELLER POWER HACK SAWS

2365 UNIVERSITY AVENUE • ST. PAUL W4, MINNESOTA

If you write maker identify as IEN - 1954

Shatterproof Electrical Connectors



Working conditions often subject electrical connectors to jerks . . . blows . . . and squeezing action, as bad as that pictured above. When this happens many apparently good connectors quickly become out-of-shape, develop insulation cracks and loose contacts . . . or literally explode.

Not JOY portable plugs and sockets however . . . their one-piece molded Neoprene construction and patented contact design provide many advantages not found in other brands.

yours . . . *ask for it*

Bulletin MC108 provides valuable additional information on JOY electrical plugs and receptacles. Ask us for your free copy.

M.E 153.9

JOY MANUFACTURING COMPANY

HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA

IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

If you write maker identify as IEN - 1955

ELASTIC STOP NUT CORPORATION OF AMERICA

Dept. R17-253, 2330 Vauxhall Road, Union, N. J.

Please send me free design information on

ROLLPIN TRADE MARK

. . . the slotted tubular steel pin with chamfered ends used for production economies in replacing

- ☐ a rivet
- ☐ a set screw
- ☐ a hinge pin
- ☐ a bolt and nut
- ☐ a stop pin
- ☐ a cotter pin
- ☐ a taper pin
- ☐ a dowel

NAME_____ TITLE_____

FIRM_____

STREET_____

CITY_____ ZONE_____ STATE_____

NEW LITERATURE—Continued

Identify as IEN - 085

DRILL BUSHINGS . . List prices of A. S. A. drill jig bushings are grouped by bushing size for five standard types in new 4-page catalog. Tables give tolerances and decimal equivalents of drill sizes. American Drill Bushing Co., 5105-9 Pacific Blvd., Los Angeles 58, Calif.

Identify as IEN - 086

DRILLING MACHINE . . German-made vertical drill has 1 in. capacity in steel, 1¼ in. in cast iron, 9-in. spindle travel and a 26 by 28-in. table. "Alfing BK-25," 4 pages. Kurt Orban Co., 204 East 43rd St., New York 17, N. Y.

Identify as IEN - 087

VENTILATING DUCT . . Flexible, collapsible, corrosion-resisting because of its coated-fabric construction over a helical-wire reinforcing. Eight-page Catalog C2-4 has an air friction chart, also includes notes on material handling. Flexible Tubing Corp., 10 Glendale Ave., Guilford, Conn.

Identify as IEN - 088

DUST COLLECTING . . Cottrell electrostatic precipitators ionize dust particles and collect them on charged electrodes. Collected dust aggregates now are removed continuously by a magnetic impulse rapping arrangement. How this rapping unit works is told in 6-page Bulletin MI, illustrated by diagrams. Research Corp., 12 Radel Ave., Bound Brook, N. J.

Identify as IEN - 089

ELECTRONIC PRODUCTS . . Free 196-page Catalog 55 on products from amplifiers to wrenches includes electronic tubes, components, hardware, tools, test equipment, paging and communicating units, and a JAN cross-reference guide. Newark Electric Co., 221-25 W. Madison, Chicago 6, Ill.

Identify as IEN - 090

FABRICS . . Cotton, rayon, acetate, nylon, Orlon, Dynel, Acrilan, Dacron, Fiberglas, Saran, Vicara are defined at the start of new 24-page "Modern Textiles for Industry." Production steps, types of weaves, non-woven fabrics, and fabric requirements by industry are noted. Wellington Sears Co., 63-67 Worth St., New York 13, N. Y.

Identify as IEN - 091

INDUCED DRAFT FAN . . Axial-flow unit mounts right in a furnace or boiler flue to provide draft with only a stub stack. Its Bifurcator divided housing keeps the motor out of the flue gas path so it remains clean, cool, accessible. Drawings in 8-page Bulletin DB-32-52 suggest three installation methods. American Machine & Metals Inc., DeBothezat Fans Div., 552-56 12th Ave., East Moline, Ill.

Identify as IEN - 092

FASTENINGS . . Collection of user reports on the company's Speed Nuts is in the form of a 28-page booklet. Each report is an advertisement reprint on a specific design problem. Ask for "Savings Stories II." Tinnerman Products Inc., Box 6688-A, Dept 14, Cleveland 1, Ohio

Identify as IEN - 093

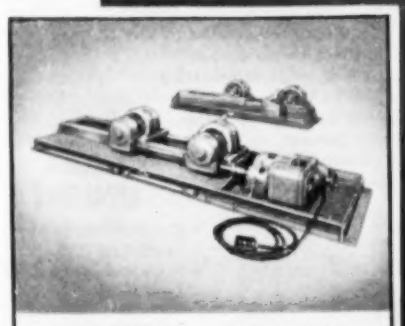
DIE FILING . . Vertical reciprocating machine with 1½-in. stroke to file, hone, saw at 170 to 470 strokes per min. "Precision Filing Machine," 4 pages. All American Tool & Mfg. Co., 8025-29 Lawndale, Skokie, Ill.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1956

REED ENGINEERING COMPANY

Modern Metalworking Equipment



- BENDING ROLLS
- TURNING ROLLS
- AUTOMATIC WELDING FIXTURES

REED PORTABLE TURNING ROLLS

- ★ In 5 models; capacities up to 75 tons
- ★ For hand or automatic welding, finishing operations on tanks up to 14 ft. diam.
- ★ Reversible, variable speed adjustment
- ★ Rugged, all-steel construction
- ★ Built-in silent worm gear drive

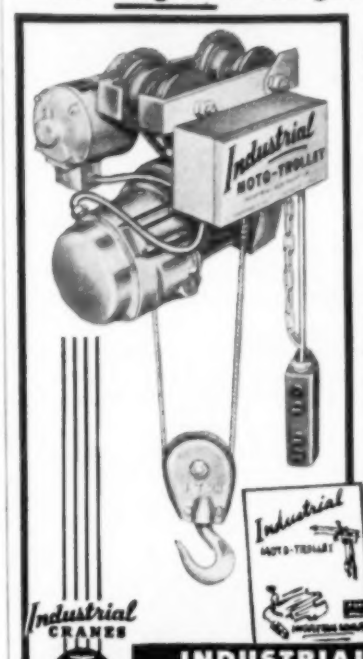
WE INVITE YOU . . . to write us for specifications, prices, list of REED users near you. No obligation. Just write on your letterhead.

REED ENGINEERING CO. 1009 W. FAIRVIEW CARTHAGE, MO.

If you write maker identify as IEN - 1957

Industrial MOTO-TROLLEY

The Original Packaged Motor Driven Trolley



MAY BE ATTACHED TO YOUR STANDARD ELECTRIC HOIST . . .

Adjustable to Accommodate Wide Variety of Beam Sizes

- Crown-tread machine steel wheels with hardened drivers.
- Each wheel equipped with double-row precision ball bearings and removable-head axle with Alemite grease fittings.
- Powered by a crane-duty high-torque totally enclosed motor of 30 minute 55 degree rating.
- Magnetic contact panel has transformer to reduce voltage in single speed push button control circuit.
- 4-button control station operates single speed trolley and hoist motions.

Write for Literature

Industrial CRANES

INDUSTRIAL EQUIPMENT CO.

321 NORTH ADA STREET CHICAGO 7, ILLINOIS

Overhead Cranes • Jib Cranes • Monorail Systems Crane Runways

Representatives in Principal Cities

If you write maker identify as IEN - 1958

STOP VIBRATION and

- Improve Equipment Layout
- Reduce Machine Installation Costs
- Improve Work Quality
- Reduce Maintenance
- Improve Employee Efficiency

Write for your free copy of Bulletin G-105

Representatives in Principal Cities

THE KORFUND COMPANY, INC.

KORFUND VIBRATION CONTROL — SPRINGS RUBBER CORK

48-35E Thirty Second Place, Long Island City 1, N. Y.

In Canada: 510 Canal Bank, Ville St. Pierre, Montreal

If you write maker identify as IEN - 1959

MATCH

the quality of your product with

Grammes

METAL NAME PLATES

Grammes metal craftsmen will make your name plate stand out and make it "sell" as well as *tell*. They are experienced in giving you just what you want: Readability that endures in metal. A sketch or blueprint—or just a hint—is all we need to show you what we can do with a name plate for you. Send for our "Tips on Name Plate Selection and Design". Write to:

NAME PLATES DIALS — L. F. GRAMMES & SONS ALLENTOWN, PA. — TRIMS • BEZELS PANELS

SPECIALISTS IN DECORATIVE METAL

If you write maker identify as IEN - 1960

ONLY SAFETY BELT HOOKS

have the patented binder bars — are rigidly mounted in double steel strips that hold hooks permanently in alignment, assuring uniform tension across the belt, maximum traction and long belt life. Moreover, these bars protect belts—lap over belt ends, prevent fraying, prevent hooks from pulling out. This better belt lacing comes in 5 sizes. It can be applied with any standard lacer or lacing machine, or, can be applied with an ordinary hammer by using the inexpensive Safety Tu-way Lacer.

Write for Circular

Safety BELT-LACER CO.
5394 N. Menard Ave.
Chicago 30, U. S. A.

If you write maker identify as IEN - 1961

SOLID . . . as a rod
FLEXIBLE . . . as a wire rope

TRU-LAY Push-Pulls snake around obstructions. Provide positive remote action for operating clutches, gates, slides, etc. Operate while flexing. Weatherproof, dustproof types. Capacities up to 1000 pounds input.

Write our Detroit office today for DH-287

TRU-LAY PUSH-PULL CONTROLS

ACCO
AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE
601 Stephenson Bldg., Detroit 2
2475 Porter St., Los Angeles 21 • Bridgeport, Conn.

If you write maker identify as IEN - 1963

GAGE . . Illuminator attachment for clear water level indication

Source: JERGUSON GAGE & VALVE CO.
80 Fellsway, Somerville 45, Mass.

Stops guessing

New **illuminator,** employing a mercury vapor lamp, has been designed to clip on the back of the company's water level gage. When the lamp is lighted the water column shows blue-green topped with a brilliant emerald green spot at the water level. The lamp is enclosed in a steel housing and operates in connection with a ballast that can be mounted at a convenient location. The attachment clips to the gage cover with two sets of brackets that do not require altering the gage. The construction is weatherproof.

If you write maker identify as IEN - 1964

LUBRICATING . . Drawing compound protects metal forming dies and work

Source: METALLOID CORP.
752 Hunt Ave., Huntington 2, Ind.

Becomes active at 550 deg. C.

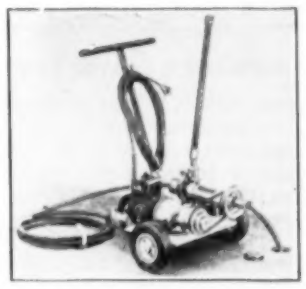
Type X-60 is a new drawing compound supplied in concentrated form for mixture in the ratio of 6 to 1 with a naphtha or paraffin oil base. It is recommended for application to the blank prior to first drawing and after annealing in a multi-stage drawing operation. It applies by dip or spray.

The material does not impart any corroding action. It will not leave a deposit or gum on a forming press. It assists in eliminating subsequent cleaning operations as it burns off clean during an anneal without forming scale or other deposit.

If you write maker identify as IEN - 1965

CLEANING . . Flexible shaft machine to remove obstructions in a sewer

Source: FLEXIBLE SEWER-ROD EQUIPMENT CO.
9057-61 Venice Blvd., Los Angeles 34, Calif.



Operator is protected

Type 1953, the company's new motor driven Flexi-Cleaner machine, is illustrated. A driving motor and belt-connected flexible shaft drive head are assembled on a three wheel truck. Step sheaves provide output speeds of 125, 250 and 500 rpm. in connection with the 25 to 1 gear reduction that is built into the motor assembly. A lever operated clutch grips and releases the flexible shaft which is available with couplings in 25-ft. lengths. An extension cord and plug connect to a 110-volt power source.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1966

FINGERS *must be saved*- KEEP THEM OUT OF PRESSES *with* LITTELL Pres-Vac

30 Pres-Vacs cost less than the average cost of only one press accident.

Operated by Compressed Air

SAFETY FEEDERS

- Blanks are fed from a distance of 14 inches
- Eliminates need of putting fingers under press ram
- ***BOOST PRODUCTION 20% TO 100%*** — *Reported by users*
- ***ELIMINATE DIE BREAKAGE*** — *Assures Feeding Blanks One at a Time*
- ***CUT INSURANCE COSTS*** — *Fewer Accidents Mean Lower Premiums.*

Littell Pres-Vac Safety Feeders are made in Single and Multiple types in a variety of cup sizes and styles.

F. J. Littell MACHINE CO.
AIR DIVISION
4133 RAVENSWOOD AVE., CHICAGO 13, ILL.
— District Offices: Detroit and Cleveland —
Write for Catalog

If you write maker identify as IEN - 1967

HERMASEAL SEAL TUBES HELP SPEED UP ASSEMBLY

WHY — Hermaseal Glass Seal Tubes have metalized ends, for easy soldering to end caps — saves time, cuts down on rejects.

STOCK SIZES
— Hermaseal makes Glass Seal Tubes in a variety of stock sizes, and can also make up special units to meet your requirements.

HERMASEAL
— is a specialist in Sealed Terminals, Headers and allied parts.

COMPLETE CATALOG
— Just off the press, a new catalog with descriptions and specifications for most of Hermaseal's stock Terminals and Headers. Write for copy today.

Hermaseal
THE HERMASEAL CO., Inc.
Elkhart 25, Indiana

If you write maker identify as IEN - 1968

THE NEW RESPIRATOR
workers want to wear

. . . the M.S.A. GASFOE

For nuisance exposure to light concentrations of organic vapors and acid gases

- ★ Smart, modern design combats workers' resistance to respirator use.
- ★ So light, users hardly know they're wearing it.
- ★ Compact, streamlined design gives greater job vision, comfort.
- ★ Replaceable parts bring economy, longer service life.
- ★ Easily changed, factory-packed cartridges assure peak protection.

Because the M.S.A. Gasfoe gives workers what they want in respirator appearance and comfort, it's tops in acceptance value. Unusually light in weight, the Gasfoe makes light work of those jobs around obnoxious odors. It's good looking; compact. No distracting corners to block job vision. Proved filter action.

It's economical, too. All parts are independently replaceable. In seconds, any element, worn out after extended service, can be replaced —a good as new respirator goes back on the job. Write for details.

MSA SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES CO.
Braddock, Thomas & Meade Sts.
Pittsburgh 8, Pa.
At Your Service: 68 Branch Offices in the United States

If you write maker identify as IEN - 1969

Chicago MOUNTED Wheels

. . . now even better with **79E BOND**

Buy Chicago Mounted Wheels—bonded with 79E Bond—and you'll never use any other!

79E—a tough new bond exclusive with Chicago Wheel—is the sensation of the industry . . . it does a BETTER grinding, burring, and finishing job FASTER. A size and shape for every use. Deliveries are excellent—Order today.

CHICAGO WHEEL & *Mfg. Co.*
Dept. N • 1101 West Monroe Street, Chicago 7

If you write maker identify as **IEN - 1970**

Whether you grind soft or hard materials, there is a Sturtevant Grinder or Crusher exactly suited to your requirements.

Tough and rugged, Sturtevant Equipment has the built-in stamina to stand up under continuous operation. Most of this equipment has the "open door" accessibility which makes cleaning easy.

Look into Sturtevant Grinders and Crushers for your applications. These machines will give you the exact mesh you want . . . cut your costs by increasing production. Write today.

Sturtevant Mill Company
113 Clayton Street • Boston 22, Mass.

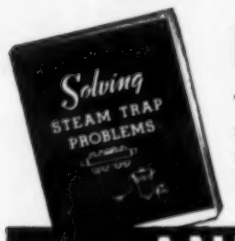
If you write maker identify as **IEN - 1971**

HAVE YOU READ A COPY OF

"Solving Steam Trap Problems"

THE MAINTENANCE MANS' ENCYCLOPEDIA

When maintenance men have a steam trapping problem, they know they can find the answer in Anderson's booklet, "Solving Steam Trap Problems". This wonderful reference book contains valuable formulas, direct reading charts and helpful tables and graphs. It tells you how to simplify piping, cut down on the number of fittings and how to save on trap installation time. In addition, you will find condensation rate charts, graphs and tables. Save time and trouble—familiarize yourself with this invaluable book. Send the coupon for your free copy now.



IT'S FREE!

This book contains 36-pages of information you need to know about steam traps. Get your copy of this handy volume today.

THE V. D. ANDERSON COMPANY

1931 WEST 96th STREET • CLEVELAND 2, OHIO

Gentlemen: Please send me a copy of the book, "Solving Steam Trap Problems." I understand this does not obligate me in any way.

Name .....
Company .....
Title .....
Address .....
City ..... Zone ..... State .....

In Canada: Bowden Industries Ltd., Toronto

NEW LITERATURE—Continued

Identify as **IEN - 094**

FORGINGS . . How forgings fill the bill for generator rotors, turbine shafts, drop-hammer anvils, ship propeller shafts, machine rolls is stated with pictures in new 28-page booklet, "Quality Forgings." United States Steel Corp., 523-27 William Penn Place, Room 4284-A, Pittsburgh 30, Pa.

Identify as **IEN - 095**

MICROINCH GAGE . . Increase in tool life of about 1,000 per cent is one of four reports quoted in 4-page Form L-22. The bulletin stresses benefits obtained from smooth-finish metal-cutting tools. Smoothness readings are taken on the company's Profilometer after tool sharpening. Micrometrical Mfg. Co., 343-47 S. Main St., Ann Arbor, Mich.

Identify as **IEN - 096**

CONTINUOUS GAGES . . That measure thickness to "tenths" in material moving at speeds to 7,000 fpm. for products such as metal, wire, foil, plastic, linoleum, paper, rubber. Contacting and non-contacting gage models and control units are summarized in 28-page Catalog 553. Pratt & Whitney, 49 Charter Oak Blvd., West Hartford 1, Conn.

Identify as **IEN - 097**

GRINDING DOGS . . Adjustable, cam-action and reversible dogs to hold work for a variety of grinding operations, also milling-machine dogs and driver. Bulletin, 8 pages. Ready Tool Co., 554 Iranistan Ave., Bridgeport 5, Conn.

Identify as **IEN - 098**

HAMMERS . . Gasoline-power one-man hammer and rock drill needs only a 6-volt battery for operation. Bulletin 613, 8 pages, tells about four models. Barco Mfg. Co., 1804 W. Winnemac Ave., Dept. H-66, Chicago 40, Ill.

Identify as **IEN - 099**

HOSE . . Five types of rubber-fabric air hose in new 4-page Catalog 3460 have oilproof jackets to prevent peeling. Four types of water suction hose in 4-page Catalog 4600 are 1½ to 12 in. i.d. for vacuum or pressure to 75 lb. B. F. Goodrich Co., 448-52 S. Main St., Akron 11, Ohio

Identify as **IEN - 0100**

HOSE FITTINGS . . Quick-detachable couplings for air, steam, oil, gas, water lines have a U-shaped gasket that is expanded by line pressure to seal tightly to 2,000 lb. How it works is shown in 8-page Catalog 6500. Hose Accessories Co., 2700 N. 17th St., Philadelphia 32, Pa.

Identify as **IEN - 0101**

HEAT EXCHANGERS . . Liquid coolers, liquid receivers, gas and liquid coolers, pressure accumulators are shown in 4-page bulletin as examples of equipment the company will design and construct. Pipe & Tubular Products Inc., 8502-6 Germantown Ave., Philadelphia 18, Pa.

Identify as **IEN - 0102**

DRAWING LUBRICANT . . Dry-film material protects sheet metal in storage and lubricates it during drawing or forming operations. The company can supply machines to apply it at 12 to 55 fpm. Bulletin L-6323, 8 pages. Gilron Products Co., 6005-9 Euclid Ave., Cleveland 3, Ohio

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1973**

MET-L-WOOD METAL BONDED TO PLYWOOD

Has Hundreds of Structural Uses in Modern Plants

To Name a Few:

- Walls and Partitions
- Doors
- Counters and Shelves
- Traffic Panels
- Truck Bodies (Patented "Ribless" Construction)
- Truck Body Panels
- X-Ray Rooms
- Moisture-Vapor-Proof Rooms and Containers
- Decorative Finishes

Met-L-Wood stock panels and prefabricated units are a challenge to modern industrial engineers and designers because of their multiple possibilities in economical, structurally-sound designs in hundreds of varied uses. Best start toward thinking in terms of Met-L-Wood design opportunities is to send for the Bulletin described below . . . Met-L-Wood Engineering Service is available without obligation on specific problems.

SEND FOR THIS BULLETIN ON MET-L-WOOD USES AND ADVANTAGES

Quick facts, with illustrations and diagrams on Met-L-Wood applications, types, possibilities. Sent without obligation on request.

Met-L-Wood is metal bonded to plywood—permanently. Many metals, woods, thicknesses, shapes, finishes are available to meet YOUR requirements.

MET-L-WOOD CORPORATION
6755 West 65th Street • Chicago 38, Illinois
"Met-L-Wood . . . opening new horizons to structural designers"

If you write maker identify as **IEN - 1974**

AGASTAT

Compact . . . Dust-Proof
TIME DELAY RELAYS
solenoid actuated—pneumatically timed

Introduces time delays into a-c or d-c circuits. Easily adjusted to provide delays ranging from 0.1 second to five or more minutes.

The AGASTAT is small, light, and operates in any position. Dust-proof timing chamber assures long operating life with a minimum of maintenance.

Write for Bulletin. Dept. A1-22,

AGA

Division of Elastic Stop Nut Corporation of America
1027 Newark Avenue, Elizabeth 3, New Jersey

If you write maker identify as **IEN - 1975**

the BUDA JACK with 1001 uses

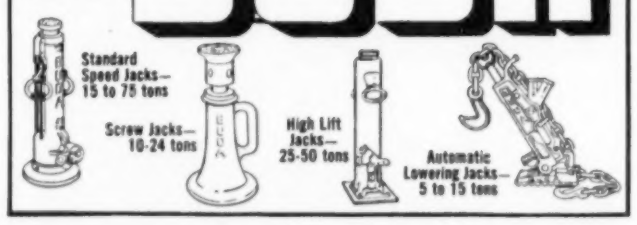
10" OVERALL HEIGHT
FAST RISE
SAFE, EASY LIFTING
NO MAINTENANCE

Simple, compact design—rugged construction, low height, high lifting capacity—safe, easy operation makes these BUDA Ball Bearing Jacks ideal for your heavy lifting jobs. Require no maintenance. Many safety features. Write for Bulletin and complete details.

THE BUDA COMPANY, HARVEY, ILL.

BJ-9

BUDA



If you write maker identify as **IEN - 1976**

NEW Corrosion-Resistant

Speedline fittings

LOWER PIPING COSTS result when you use *Speedline* fittings, because you can use lightweight Schedule 5 pipe. Increased ID of Schedule 5 pipe gives lines increased capacity.

RAPID INSTALLATION is possible because the *Speedline* method often eliminates the need for welding or flaring.

Write for your copy of this 20-page *Speedline* catalog. It gives you the entire story.

HORACE T. POTTS CO. *Since 1815*
Erie Avenue & D Street, Philadelphia 34, Pa.
Baltimore Branch Warehouse, 2835 Sisson Street

If you write maker identify as **IEN - 1977**

NATIONAL VULCANIZED FIBRE

contributes to an improved product—

in spectacle cases for American Optical COMPANY

Punched and formed pieces of tough, resilient National Vulcanized Fibre reinforce spectacle case to provide lasting shape retention and serviceability. This use is typical of the countless contributions National Vulcanized Fibre—*the material of a million uses*—makes to industry and business.

National Laminated Plastics nationally known—nationally accepted

NATIONAL VULCANIZED FIBRE — A tough, horn-like material with high dielectric strength. Excellent machinability. Sheets, Rods, Tubes, Special Shapes.

PHENOLITE Laminated PLASTIC — Good electrical insulating material with great mechanical strength; moisture resistant. Sheets, Rods, Tubes, Special Shapes.

NATIONAL VULCANIZED FIBRE CO.

Wilmington, Delaware — Offices in Principal Cities

Since 1873

If you write maker identify as **IEN - 1978**

Presto . . . it's UP!

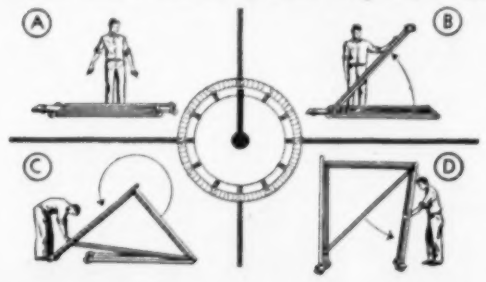
25 ft. "UP-RIGHT" SCAFFOLD-ON-WHEELS

Set up in only 5 minutes!

As if by magic, an aluminum alloy tower of any height desired is ready in minutes! Individual scaffold sections are set one on top of the other. Sections lock into place instantly. The tower rolls down aisles . . . straddles machinery.

HERE'S THE SECRET!... Patented **ONE-PIECE SECTIONS**

Each one-piece section is unfolded by one man in less than a minute! No tools, wing nuts or bolts.



WRITE FOR DESCRIPTIVE BULLETIN

"UP-RIGHT" SCAFFOLDS

DEPARTMENT 142 • 1013 PARDEE STREET • BERKELEY, CALIFORNIA

Factories: Berkeley, Calif. and Teterboro, N. J.

Offices in all principal cities

If you write maker identify as **IEN - 1980**

TESTING . . Titrating apparatus to plot continuous end point curves

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.

For laboratory use

The company has made a new assembly of laboratory apparatus to plot continuous curves with readings of change in pH. The apparatus includes the company's burette stand and holder, two burettes with curved tips, and electrode support, a 250-ml. beaker and the company's new magnetic stirrer equipped with two magnets, one made of polyethylene plastic and one glass enclosed. The stirrer operates on 110-volt 60-cycle ac.

One assembly is built around the Beckman H-2 temperature compensated direct reading pH meter. A second assembly employs a portable battery operated Beckman Type N-1 meter shown in the illustration.

If you write maker identify as **IEN - 1981**

CONNECTOR . . Wire end clamp threads into molded plastic cap

Source: HOLUB INDUSTRIES INC.
411-15 DeKalb Ave., Sycamore, Ill.

Carton holds 100

The brass clamp in this new Set Screw wire connector is available in a range of sizes for various combinations of No. 12 to No. 18 solid or stranded wire. The wire ends are held by the set screw after they have been stripped of their insulation and inserted into the brass unit which then is threaded into a long skirted molded plastic shell.

If you write maker identify as **IEN - 1982**

POLISHING . . Buffing wheels, centrifugally cooled, 12 to 18 inches

Source: HANSON-VAN WINKLE-MUNNING CO.
100 Filbag St., Matawan, N. J.

Ask for Bulletin B-100

Ventilating air enters the company's new Ruff-L-Buff through holes in the fiber board center, when two or more of the units are employed to make up a buffing wheel. Centrifugal force drives the air through channels between each buff to the cloth surface to provide cooling action and minimize the requirement for buffing composition. The cloth is cut diagonally for best buffing action, to prevent raveling.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1983**

ROWE ADJUST-A-DOCKS

Eliminate Costly Hand Loading

1. Brings dock to level of any truck bed.
2. Speeds loading by fork and lift truck directly into carriers.
3. Eliminates dock hazards.
4. Floats at truck level.
5. Sturdy hydraulic finger-tip control.
6. Pays for itself in 30 days.

ADJUST-A-DOCK

LOOK into the SAVINGS you can make in freight handling with Rowe Adjust-A-Docks. **WRITE FOR BULLETIN** and complete information.

ROWE METHODS, INC.

2534-H DETROIT AVENUE • CLEVELAND 13, OHIO

If you write maker identify as **IEN - 1984**

Power- and control-cable information

Free Booklet offers complete data on . . .

VERSATOL*-GEOPRENE CABLE

This booklet gives you the complete details on tough, dependable General Electric Versatol-Geoprene cable . . . explains this famous cable's unusual installation and operation economies . . . tells how easy splicing and termination can help cut installation time.

Send for details on Versatol-Geoprene cables now to help you on practically any type of 600-volt application. Write for "G-E Versatol-Geoprene Power and Control Cable Booklet," #19-390, to Section W30-242, Construction Materials Division, General Electric Company, Bridgeport 2, Conn.

**Registered Trade-mark of General Electric Company*

You can put your confidence in—

GENERAL ELECTRIC

If you write maker identify as **IEN - 1985**

TRI CLAD MOTORS ...via Graybar

Free Bulletin **describes 3-way protection features of rugged Tri-Clad motors.**

Protection against *damage . . . breakdown . . .* and *wear!* That's what you get when you buy a G-E Tri-Clad motor. Easily adaptable for all general-purpose applications where compactness and low up-keep are "musts", they offer long, service-free operation.

Available in sizes from ½ to 5 horsepower G-E Tri-Clad single-phase capacitor motors weigh 15 to 20 percent less than other types depending on the rating.

Order your Tri-Clad motors through any one of the more than 100 Graybar offices located throughout the nation. Your nearby Graybar Representative will be glad to help you select the motor best suited to your power needs. Graybar Power Specialists are also available to help plan major electrical power installations. *Graybar Electric Co., Inc. Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.* 313-122

Call Graybar *first* for . . . Everything Electrical — GraybaR ELECTRIC COMPANY

If you write maker identify as **IEN - 1986**

Five years ago GUILD SHOES replaced its special machines for ornamenting leather with its first Benchmaster Punch Press. So successful was the application that 14 Benchmasters have now been installed, one for each separate die operation. *Installation of the extra Benchmasters has proved more economical than continually changing dies!* Now, two good operators working all 14 Benchmasters *supply the entire factory* with ornamental pieces! Both 1-ton and 4-ton Benchmasters are in use.

MORAL: Whatever the application, for high production at low cost, it's tough to match a Benchmaster! *Write for folder showing all models!*

benchmaster
MANUFACTURING COMPANY
1835 W. Rosecrans Ave., Gardena, California

If you write maker identify as IEN - 1987

FOR BETTER PRINTS . . .
MAKE YOUR DRAWINGS ON
BRUTEX
PENCIL TRACING CLOTH

1. SUPER-VELVET MATTE SURFACE . . . white or blue — exactly right for pencils of even the harder grades.
2. UNIFORM TRANSLUCENCY . . . makes clean, sharp prints.
3. ERASES EASILY . . . no "ghosting". Surface is unaffected by even repeated erasures.
4. MOISTURE-RESISTANT . . . no "spots" from dampness or perspiration.
5. PERMANENT . . . won't discolor, become brittle, or lose translucency.

Prove it on a FREE SAMPLE! Write for free sample and booklet. CHARLES BRUNING COMPANY, INC., Dept. B23, Teterboro, N. J.

A-3-1

BRUNING
Everything for the Engineer and Draftsman

If you write maker identify as IEN - 1988

POSITIVE GRIPS
THE "HAMMER-LOCK" and Electroline FITTINGS

The "Hammer-Lock" has long been a favorite grip of wrestlers. But just as popular, in Industry, is the Electroline Fitting . . . these safe, economical, permanent wire-rope connectors may be installed by unskilled labor in a matter of minutes with ordinary mechanic's tools.

Electroline Fittings slash re-roping costs—and prolong wire-rope life by damping vibration stresses and overcoming rope fatigue at entrance to the fitting. Send for catalog describing "positive-grip" Electroline Fittings!

Electroline Company
4121 SOUTH LA SALLE STREET
CHICAGO 9, ILLINOIS
IN CANADA: POWERLITE DEVICES, LTD., TORONTO

If you write maker identify as IEN - 1989

WHERE CAN YOU USE A
VARIABLE VOLTAGE ADJUSTOR

• Bulletin VA-180 gives complete specifications of Acme Electric Variable Voltage Regulators in ratings from 150 watts to 10 KVA. Write for copy.

Many industrial maintenance and operating problems can be quickly solved by the installation of a Variable Voltage Adjustor to manually control a low voltage or fluctuating voltage circuit. This is particularly true where a voltage drop at electrically powered equipment, located a considerable distance from a transformer, reduces the performance, efficiency and prevents normal operation. If you have a condition like this in your plant write for Bulletin VA-180.

ACME ELECTRIC CORPORATION
262 WATER ST. CUBA, N. Y.

Acme ACME Electric
TRANSFORMERS

NEW LITERATURE—Continued

Identify as IEN - 0103

DRY LUBRICANT . . Molybdenum-disulfide materials form a tenacious low-friction surface even when subjected to high bearing pressures and elevated temperatures. Dry and grease types, colloidal dispersions, are described as to properties and list prices in 8-page Bulletin 95. Alpha Corp., 177-81 Hamilton Ave., Greenwich, Conn.

Identify as IEN - 0104

MACHINING . . Three automatic profiling machines for jet-engine blades finish the airfoil. First is a profile milling machine, second is a profile grinding machine, and third is a profile polishing machine that employs an abrasive belt. Bulletin 50620, 4 pages, describes the machines and the work cycles, gives their specifications. Ex-Cell-O Corp., 1202 Oakman Blvd., Detroit 32, Mich.

Identify as IEN - 0105

MANAGEMENT . . Training program for plant-operating men stresses cost reduction. One aspect of the company's consulting and training service is presented in 12-page booklet form, "Industrial Maintenance." It makes specific suggestions on plant facilities, what to do for plant maintenance, advantages of good industrial housekeeping. Wheeler Associates Inc., 15015-19 Detroit Ave., Cleveland 7, Ohio

Identify as IEN - 0106

MELTING CRUCIBLES . . No copper or nickel contamination when you melt magnesium in Amera-Mag steel crucibles. They come in 40 to 6,000-lb. capacities for holding, ladling, superheating, pouring, or for primary melting. New 4-page bulletin gives detail literature references. American Tank & Fabricating Co., 2282-86 Scranton Road, Cleveland 13, Ohio

Identify as IEN - 0107

METAL . . Design-strengthened sheet and strip have a three-dimensional surface for 14 qualities ranging from decorative texture to impact resistance. How others have used these qualities in products from aircraft to vending machines is shown in 16-page booklet, "Rigid-Tex Metals." The cover reproduces a typical pattern in three dimensions. Rigidized Metals Corp., 664-P Ohio St., Buffalo 3, N. Y.

Identify as IEN - 0108

METAL PARTS . . Pins, pivots, clock gear studs, mandrels for abrasive points, perforating punches, screwdriver blades are representative small precision parts which the company makes to order by the millions or by the hundreds. Typical examples are illustrated in 4-page bulletin. Torrington Co., Specialties Div., 502 Field St., Torrington, Conn.

Identify as IEN - 0109

FLOW METERS . . For liquids and gases in process, power, water plants are described in revised General Catalog 003, 32 pages, along with gages, controls, venturi tubes. Simplex Valve & Meter Co., 6717 Upland St., Philadelphia 42, Pa.

Identify as IEN - 0110

METERS . . Pneumatic transmitter equipment for process variables, together with magnetic, electric, electronic and electronic-follower equipment, are covered in 20-page Catalog T-50. A large color-coded drawing shows how a typical unit works. Schematic diagrams are included. Fischer & Porter Co., 7250 Jacksonville Rd., Hatboro, Pa.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1990

For HIGHEST ELECTRICAL & MECHANICAL Efficiency!
New
JONES 2400 SERIES
PLUGS & SOCKETS

Improved Socket Contacts. Four individual flexing surfaces. Positive contact over practically their entire length.

Both Plug and Socket Contacts mounted in recessed pockets greatly increasing leakage distance, INCREASING VOLTAGE RATING.

Plug and Socket Contacts cadmium plated. Add to appearance of your equipment.

Interchangeable with Jones 400 Series.

Ask for Catalog 18. Complete line Jones Plugs, Sockets, Terminal Strips.

P-2406-CCT
Plug — with cable clamp in top.

S-2406-SB
Socket with shallow bracket for flush mounting.

Send for complete data on this new basic improvement!

Jones
HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED CARR FASTENER CORP.

If you write maker identify as IEN - 1991

Add Years to Air Equipment Life—
Use Filtered Air

All air lines collect moisture. Rust and dirt enter the lines, too, to clog lines, and shorten equipment life.

Give your air equipment top protection with Schrader Air Line Filters ahead of each air control unit. Schrader filters offer no restriction to full air flow, even after long use. Moisture is trapped in the bottom of the filter, can be drawn off through a drain cock.

See how Schrader Air Line Filters and other Schrader accessories can add to your effective use of air. Send for the Schrader catalog today.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-42, Brooklyn 38, N. Y.

If you write maker identify as IEN - 1992

FORCE
puts marking on the assembly line . . . . . .

CONVEYOR MARKING ATTACHMENT

Today's easiest way to print code numbers or dates on products . . . boxes . . . cartons . . . packages . . . containers. Available for installation on all kinds of conveyor lines. Automatic, self-inking, with instant-change type. *Write today for Force Specification Sheet and catalog.*

WM. A. FORCE
& COMPANY, INCORPORATED
216 NICHOLS AVENUE, BROOKLYN 8, N. Y.

If you write maker identify as IEN - 1993

STROBOTAC®
for "Slow Motion" Study of
ROTATING · VIBRATING and RECIPROCATING MECHANISMS

Leading manufacturers have applied the Strobotac to the solution of hundreds of mechanical problems.

★ Motor speeds are accurately measured under any load conditions—operating conditions are not altered

★ Commutator chattering, brush eccentricity and frame vibrations are easily detected

★ Fan operation is studied with aid of chemical smoke in air currents around blades

★ Recurring imperfections in steel being rolled at 70 mph are readily detected — slip between top and bottom rolls is observed

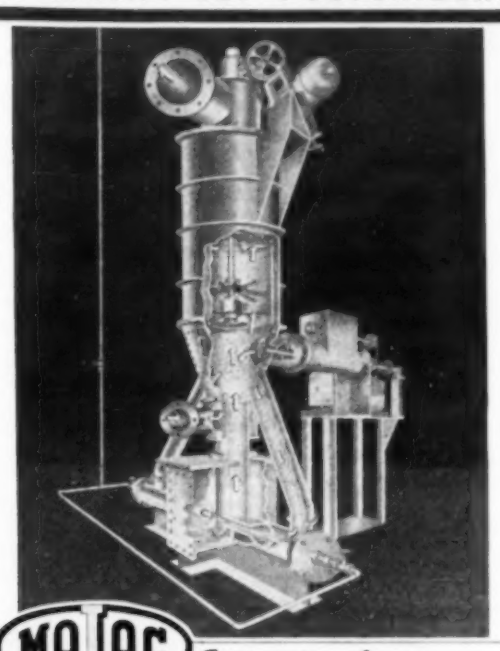
The Strobotac has been used to great advantage in design, production, testing, and sales demonstrations . . . its uses are extremely diverse.

Type 631-B Strobotac 600 to 100,000 rpm . . $140
Type 631-BL Strobotac has additional 60 to 1440 rpm range $170

GENERAL RADIO Company 275 Massachusetts Ave., Cambridge 39, Mass.
90 West St. NEW YORK 6 · 920 South Michigan Ave. CHICAGO 5
1000 North Seward St. LOS ANGELES 38

If you write maker identify as IEN - 1994

WRITE FOR THE NEW TECHNICAL BULLETIN ON MAJAC JET PULVERIZERS



MAJAC Engineering Company
189 FREEPORT ROAD
BLAWNOX (PITTSBURGH DISTRICT) PENNA.

If you write maker identify as IEN - 1995

EXIT THE SHOVEL...

ENTER THE Hapman

Sealed-pin Chain, Neoprene-flighted

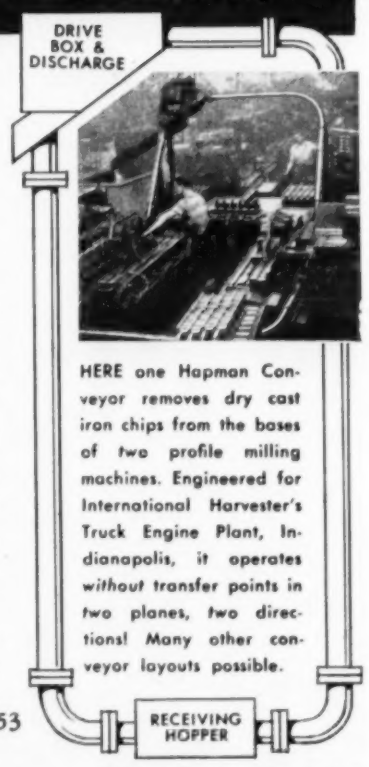
TUBULAR CONVEYOR

for low-cost handling of bulk flowable materials—wet or dry

"Shovel labor" costs *plenty* — so do safety hazards and confusion caused by heavy aisle traffic. But there's a better way — the *Hapman Way!*

By handling innumerable bulk materials with Hapman Tubular Conveyors, you can slash these costs — and increase safety and efficiency! Can you handle metal chips from machine tools? *Yes!* Flour? *Yes!* Abrasive or corrosive chemicals? *Yes!*

Get details NOW — write Hapman, describing your problem. Ask for Bulletin IN-253



HERE one Hapman Conveyor removes dry cast iron chips from the bases of two profile milling machines. Engineered for International Harvester's Truck Engine Plant, Indianapolis, it operates *without* transfer points in *two* planes, *two* directions! Many other conveyor layouts possible.

Hapman CONVEYORS, INC.
DIVISION HAPMAN-DUTTON COMPANY
KALAMAZOO MICHIGAN

If you write maker identify as IEN - 1997

WEIGHING . . Torque balance for precision readings to 20 grams

Source: OHAUS SCALE CORP.
1046 Commerce Ave., Union, N. J.

Made in Holland

The load beam that rides horizontally in unloaded position in the housing of this new precision balance is mounted on a torsion rod anchored at the rear and secured to a weighing lever at the front. Extending vertically downward is a zero position pointer. It appears in a small window near the bottom of the main dial. Secured to the weighing lever spindle is a pointer that travels over the dial scale. The hook at the right hand side of the beam suspends the load to be weighed. A similar hook on the left hand end takes a counterweight for torque compensation or to double the rated load capacity of the balance.

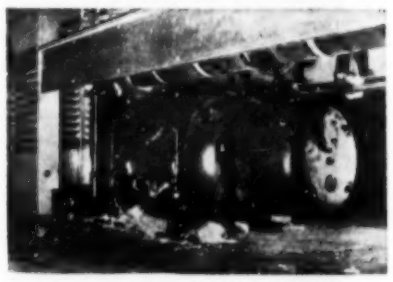
A reading is made after adjusting the pointer to zero and suspending the load inside the protecting housing. It hinges to the rear for this purpose. The required counterbalance is then applied on the left hand side in its compartment and the weighing lever is turned until the zero pointer returns to zero position. At this point the main dial scale is read.

Thirteen sizes in the Model C illustrated have maximum ranges without the counterweight from 1 milligram to 10 grams. When the counterweight is employed in an amount equal to the rating of the scale the range is doubled. Maximum load that can be weighed is 25 milligrams in the smallest unit, 22 grams in the largest. List price is $198 to $240.

If you write maker identify as IEN - 1998

MOTOR . . Totally enclosed, fan cooled, for spinning frame drive

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



15 to 20 hp. at 1,800 rpm.

New motor, assembled with a thermostatic circuit switch and a Stearns electric brake, has been designed to fit under the new Saco-Lowell Gwaltney spinning frame. At one end of the motor, outside the enclosed housing with guard protection, is an external cooling fan made of non-sparking Textolite. This fan forces air over the outside of the motor frame and down the length of the spinning frame to distribute the motor heat and to keep the outside of the motor free from lint.

Type SD-1 provides practically constant efficiency for varying spinning loads from 50 to 115 per cent of the motor's full load rating. Grease fittings are provided on the side for relubrication when necessary. The thermostatic relay opens the motor circuit in the event of an abnormal rise in temperature. The new design is available water and air cooled.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1999

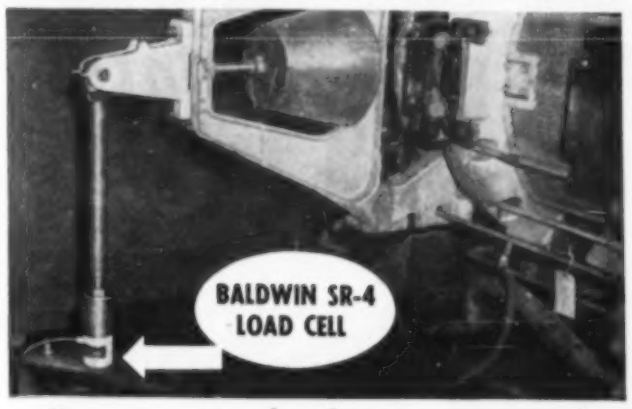
SEND FOR YOUR COPY

A Story of the Taylor Industrial Thermometer

WHEN you are selecting thermometers to protect costly equipment and vital processes you need adequate details of design and construction. This fascinating booklet takes you, step by step, through the manufacturing processes that assure dependable performance. Profusely illustrated. Informative, educational, very readable. Write today for "A Story of the Taylor Industrial Thermometer". Taylor Instrument Companies, Rochester, N.Y., and Toronto, Canada.

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

If you write maker identify as IEN - 2000



Dynamometer loads now measured Electronically

To eliminate cumbersome conventional methods for obtaining dynamometer readings during tests on aircraft engines, one manufacturer now uses a Baldwin SR-4 Load Cell located under a column linked to the arm of a 3000 hp, cradle-type dynamometer. Accurately, instantaneously, all changes are read at a remote location . . . the entire test completed far faster.

If you have any problems in measuring torque, batch weighing, crane weighing, continuous belt weighing, investigate these new electronic measuring devices. Compact, durable, super-accurate, completely sealed—and completely free from the inaccuracies of conventional methods—Baldwin SR-4 devices are the modern solution to most measuring problems.

BALDWIN-LIMA-HAMILTON
TESTING HEADQUARTERS
Philadelphia 42, Pa.
In Canada: Peacock Bros., Ltd., Montreal, Quebec

If you write maker identify as IEN - 2001

3 Soldering Operations in 1 Easy as ABC with KESTER "SOLDERFORMS"

Here's a typical example of a tough resistance soldering job involving progressively lower melting temperatures. Kester "Solderforms" made sure this high precision oscillator coil came through every test successfully.

WRITE TODAY for free "Solderform" samples and literature.

KESTER SOLDER COMPANY
4211 Wrightwood Ave. • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

If you write maker identify as IEN - 2002

Here's a small, sturdy new air regulator that keeps line pressures dependably accurate — at a surprisingly low cost.

It has large capacity at all pressure settings. Responds instantly to increases in demand with minimum pressure drop.

Compact, it requires little space and is easy to install. Servicing may be done with valve in the line.

Initial pressures up to 250 lbs. reduced to any pressure between 5-60 lbs.; 60-100 lbs. Sizes ¾" to ⅝" with brass body. 2½" gauge included.

See your Mason-Neilan Industrial Distributor

MASON-NEILAN REGULATOR CO.
1188 ADAMS STREET, BOSTON 24, MASS., U. S. A.

If you write maker identify as IEN - 2003

Couch

Fire Alarm Systems for OUTSTANDING DEPENDABILITY

Designed to operate unfailingly when needed, even years after installation, Couch Fire Alarm Systems assure positive, dependable protection of life and property.

If your plant requires:
- a simple evacuation alarm
- a coded alarm which locates the fire
- a tie-in with municipal alarms

Couch Fire Alarm Systems are the ideal solution. Write today for Bulletin 5211.

Simplified Systems of Communication

S.H. Couch Company, Inc.

NORTH QUINCY 71, MASSACHUSETTS

If you write maker identify as IEN - 2004

free Booklet

tells how to select pneumatic cylinders

- If you want a simple explanation of how to select pneumatic cylinders, send for a copy of our new 16-page booklet. It shows you how to determine the correct cylinder diameter, length of stroke, and type of mounting and lever system that will give you best operation. A table of performance data for each size cylinder enables you to order your cylinders right from this booklet.

Complete new line of pneumatic cylinders

- In addition to valuable application information, you get complete details about Westinghouse Air Brake Co.'s new line of cylinders. Completely redesigned, these cylinders are simpler and more rugged than previous models, and require less mounting space.

You can get these cylinders in diameters from 1½" to 10" with adjustable cushioning on 3" or larger diameters and with the stroke that you specify. They can be used in either air or hydraulic circuits. Send the coupon for complete information.

Westinghouse Air Brake Co.
Dept. IEN-2, Industrial Products Div.
Wilmerding, Pa.
Please send me a copy of the booklet on your new line of pneumatic cylinders. I understand that it also contains some valuable application data.

Name.....
Company.....Title.....
Address.....
City & State.....

Westinghouse Air Brake COMPANY

INDUSTRIAL PRODUCTS DIVISION WILMERDING, PENNA.
Factory Branch: Emeryville, Calif.
In Canada: Canadian Westinghouse Co., Ltd., Hamilton, Ontario

NEW LITERATURE—Continued

Identify as IEN - 0111

MILLING CUTTERS . . Lubricant feeds through openings in the tool itself in one design of non-ferrous metalworking cutter listed in 20-page Catalog 52-A. Spiral router bits, milling cutters, specials are cataloged with list prices. Onsrud Cutter Mfg. Co., 813 E. Broadway, Libertyville, Ill.

Identify as IEN - 0112

MIXING . . Impeller-type change-can, straddle-mounting, drum-mounting mixers, side-entry agitators, with electric or pneumatic motors are reviewed in 6-page Bulletin 521. Conn & Co., 9-13 S. Marion St., Warren, Pa.

Identify as IEN - 0113

MOTOR CONTROL . . Advantages of control centers for a group of motors are stated at the start of 32-page Bulletin B-5621. Steps in planning are outlined, selection charts included, construction points shown. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

Identify as IEN - 0114

NAME PLATES . . Actual samples of embossed-metal name plates, instruction plates, identification tags are mounted in new CCS File Folder. Text describes features of attractive appearance, permanent legibility, quick production. Chicago Car Seal Co., 632-36 N. Western Ave., Chicago 12, Ill.

Identify as IEN - 0115

WHITE PAINTS . . Fog control is a feature of one mill white that permits spraying at very low pressure with minimum spray dust. This and other interior white paints are described in new 4-page "Mill Whites" bulletin. Arco Co., 7303 Bessemer Ave., Dept. P, Cleveland 27, Ohio

Identify as IEN - 0116

PLASTIC SHEET . . Optically clear rigid sheet for crane cab windows, watch crystals, welding cover lens, and similar applications. Eight-page "Cocor Catalog" gives features and fabrication on four types with a properties comparison table. Cast Optics Corp., 3 Post Road, Riverside, Conn.

Identify as IEN - 0117

PLASTICS . . Alkali resistance of Pliolite S-5 thermoplastic resin suits it for use in masonry paints. Twenty-page booklet, "Stucco Finishes," tabulates a number of paint formulations, describes production techniques for paint makers, performance test results. Goodyear Tire & Rubber Co., Chemical Div., 1142-46 E. Market St., Akron 16, Ohio

Identify as IEN - 0118

PLIERS . . 82 models, standard and special, including one for cutting plastics, one for closing hog rings, needle-nose and other types, all in 24-page Catalog 66. A feature is drawings of plier jaws keyed to dimensions in the text. Special handles and wrenches are included. Utica Drop Forge & Tool Corp., 2413-17 Whitesboro St., Utica 4, N. Y.

Identify as IEN - 0119

PLYWOOD . . With a bonded metal surface to use in doors, panels, walls, equipment housings, cabinets and other applications requiring a light strong sheet that is readily fabricated. Bulletin 521, 16 pages, shows edge designs, openings, includes fabricating instructions, catalog data. Met-L-Wood Corp., 6753-57 W. 65th St., Chicago 38, Ill.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2006

Count Anything—Anywhere

Parts, sheets, bottles, cans, boxes, oranges, people, shadows, box-cars — measure lengths of wire, rope, tape, paper, fabric.

Counting Problems Solved

Helping you stop guesswork, save labor, eliminate waste and avoid human error through automatic counting is our business.

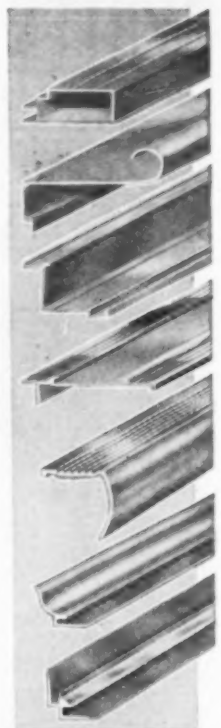
Ask your PIC Representative or tell us what you want to accomplish.

Complete Catalog mailed on request

PRODUCTION INSTRUMENT COMPANY
700-10 W. Jackson Blvd., Chicago 6, Ill.

If you write maker identify as IEN - 2007

NAME THE ALUMINUM SHAPE YOU NEED



Here's a good, dependable source for aluminum extrusions in quantity. Send us your inquiry with adequate information and we will answer promptly. Whatever aluminum shape you need for your product or contract, Youngstown Manufacturing, Inc., can supply. Write, wire or phone.

BUY FROM THE Big Name IN THE Aluminum Extrusion BUSINESS

YOUNGSTOWN MANUFACTURING, INC.
66-76 South Prospect Street
Youngstown 6, Ohio

SUPERIOR ALUMINUM EXTRUSIONS

If you write maker identify as IEN - 2008

DURKEE-ATWOOD DOR-TITE, a soft, resilient sponge rubber stripping insulates the aluminum storm panel from steel casement giving weather-tight protection, and a cushion against shocks.

DOR-TITE comes in exact widths and thicknesses needed... requires no trimming . . . applies readily because of its factory-processed, wet-type adhesive back. *No solvents needed to activate adhesive . . . no metal preparation required other than a clean surface.* SPEEDS WORK, CUTS PRODUCTION COSTS.

The Empire Home Improvement Co., of Denver, makers of storm window panels, has used DURKEE-ATWOOD DOR-TITE for four years. Mr. D. S. Nelson, sales manager says, "We have found it to be extremely helpful in our insulating application." Empire storm windows are designed for steel casements and are mounted directly on the outside of the primary windows.

Investigate the money-saving possibilities of DURKEE-ATWOOD DOR-TITE applications in your business . . . check its amazing versatility. DOR-TITE, because of its *patented built-in fabric base* does not stretch during application . . . does not creep back and pull loose after application as do many other types of sponge stripping.

DURKEE-ATWOOD COMPANY
Dept. IE 2, Minneapolis 13, Minn.

Form No. 544

If you write maker identify as IEN - 2009

If you write maker identify as IEN-2010

Save Time—Speed Assembly WITH KELLER AIR TOOLS

Wherever there are screws to drive or nuts to set, these lightweight tools make work easier and faster, and reduce labor costs.

Consume less air

Weigh less

Interchangeable parts

Reduce operator fatigue

Attachments, clutches, finders, and bits for every purpose

Send for illustrated descriptive bulletin and detailed information

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN-2011

SAVE TIME... U. S. Royalite tote boxes are engineered for use on almost any type of conveying equipment.

SAVE SPACE... U. S. Royalite tote boxes nest or stack... automatically lock in stack position.

SAVE CONFUSION... U. S. Royalite tote boxes are life-time colored for easy departmental segregation and identification.

Save Money with U. S. Royalite Tote Boxes!

Impervious to factory damage hazards, tote boxes made of U. S. Royalite save you money all around!

Tough, lightweight U. S. Royalite is waterproof, stainproof, not affected by oils, alkalies, most acids. Tote boxes made of this durable plastic are of *one-piece design* without rods, rivets, or seams. No metal parts to break, rust or corrode.

Speed up production line operations... cut manual handling time with U. S. Royalite tote boxes. Available *now* in a wide range of widths, depths and colors.

CHECK LIST OF ADVANTAGES OF U. S. ROYALITE TOTE BOXES

- ✓ Available immediately in any size
- ✓ Tough—will last indefinitely
- ✓ Lightweight
- ✓ Highly resistant to impact, non-splintering
- ✓ Not affected by oils, alkalies, most acids
- ✓ Color-permeated throughout for easy departmental segregation
- ✓ Will stack or nest
- ✓ Adaptable to any type conveying system
- ✓ Non-warping, non-corrosive
- ✓ Waterproof, stainproof, non-magnetic

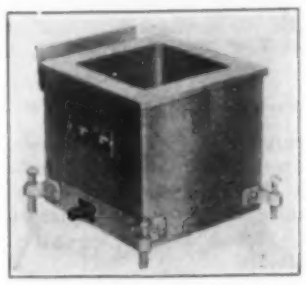
U.S. ROYALITE TOUGH PLASTIC PRODUCTS

UNITED STATES RUBBER COMPANY
2638 North Pulaski Road, Chicago 39, Illinois

If you write maker identify as IEN-2013

MELTING . . Electric pot to dip solder heavy work pieces

Source: DEE ELECTRIC CO.
1103 N. Paulina St., Chicago 22, Ill.



Thermostat built in

Heating elements for the company's new line of electric soldering pots are embedded in ceramic and are thermostat controlled for temperatures between 450 and 1,000 deg. F. The insulated pot is supported on adjustable feet so it can be set up level on an uneven surface. Sizes range from a melting chamber measuring 4 by 4 by 2 in. to 6 by 6 by 5½ inches. Operation is on 110-volt ac. with input at 600 to 1,300 watts depending on the size. A detachable tray on one side serves as a dross receptacle.

If you write maker identify as IEN-2014

SCREENING . . Heater attachment assists in processing moist materials

Source: HEWITT-ROBINS INC.
664-68 Glenbrook Road, Stamford, Conn.

For No. 2 mesh or smaller

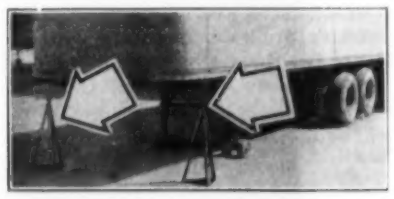
Wet sand, coal, lime, ore, chemicals can be handled efficiently by any of the company's new or previously installed screening equipment with the aid of the Hannon electric heater attachment. This attachment is now available, for application on specified screening equipment of the company's manufacture, to raise the temperature of the screen cloth to prevent clogging or "blinding" when wet materials are being handled. The screen is heated just enough to reduce moisture content to a point where the material will pass through the mesh freely.

Equipment employs a step-down transformer to convert 220, 440 or 550-volt ac. to low voltage heating current which is delivered through cables to special busbars that extend the full length of the screen on each side. The screen then acts as a resistor to be heated to the desired temperature.

If you write maker identify as IEN-2015

JACK . . Screw operated stand supports trailer at loading platform

Source: JOYCE-CRIDLAND CO.
2025-29 E. 1st St., Dayton 3, Ohio



Applies in pair

Load rating of this new Trail-'R-Stan is 5 ton. Adjustment is in a height range between 35 and 48 inches. The assembly includes a tripod base made of angle iron with a threaded head, screw and swivel head cap. Application is beneath the overhanging end of a motor vehicle trailer to prevent it from tipping.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-2016

WOMEN WORK WELL WITH RAYTHEON WELDPOWER® WELDERS

Says BOMAC LABORATORIES, Beverly, Mass.

In selecting Raytheon WELDPOWER units exclusively for production welding parts for Hydrogen Thyratron tubes, Bomac Laboratories chose Raytheon WELDPOWER because:

- Unskilled women operators learn to make acceptable welds in a matter of hours.
- Oxides and annealing caused by welding are eliminated.
- Maintenance and interchange of electrodes are easily accomplished.

Learn the many advantages of joining ferrous, non-ferrous or dissimilar metals with Raytheon Condenser Weldpower Control Units. Available in 3 sizes with appropriate Weldpower Heads.

Send sample parts or write for details to Dept. 6270 (IN-2).

RAYTHEON
Excellence in Electronics
RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago
New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL DIVISION, 19 RECTOR STREET, NEW YORK CITY

If you write maker identify as IEN-2017

Whether you slap-trowel it... or gun it...

You reduce refractory maintenance costs with J-M BLAZECRETE

Your labor costs for refractory maintenance are materially reduced when you build and repair linings with Johns-Manville's new hydraulic setting Blazecrete.*

Blazecrete is mixed with water just like ordinary concrete. It goes on fast . . . without laborious ramming or tamping. Blazecrete linings resist spalling, withstand slagging action, and are not harmed by rapid changes in temperature.

To meet various operating temperatures and service conditions, there are *three* types of Blazecrete:

3X BLAZECRETE. For temperatures through 3000F. Excellent for heavy patching, especially where brickwork is spalled or deeply eroded. Builds and repairs forge furnace linings, lime kilns, burner blocks.

STANDARD BLAZECRETE. For temperatures through 2400F. For building new and repairing old refractory linings. Can be used by boiler manufacturers to replace fire clay tile in wall construction.

L. W. BLAZECRETE. For temperatures through 2000F. An *insulating* refractory . . . light in weight, low in thermal conductivity. For building new linings and repairing old.

For details, send for Brochure RC-28A. Write Johns-Manville, Box 60, New York 16, N. Y. In Canada, 199 Bay St., Toronto 1, Ontario.

Johns-Manville BLAZECRETE
*Reg. U. S. Pat. Off.
REFRACTORY LININGS

If you write maker identify as IEN-2018

A NEW SIZE! 43 H.P.

DODGE TORQUE-ARM *Speed Reducer*

Here is the new "big brother" of the famous Dodge Torque-Arm family. Double reduction—43 hp capacity—output speeds from 12 to 110 rpm. Rugged, dependable, economical. No special engineering required, no expensive installation. Driven through any V-belt drive—stock Taper-Lock sheaves prescribed for desired speeds. Backstop available if desired. Write for special Torque-Arm bulletin and information about new Dodge Tri-Matic Overload Release.

DODGE MANUFACTURING CORPORATION, 600 Union St., Mishawaka, Ind.

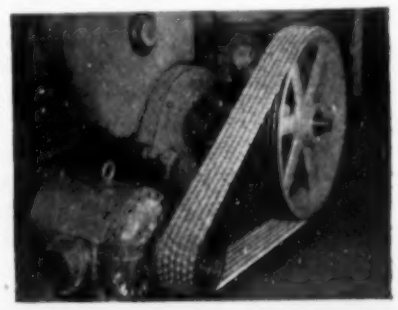
DODGE of Mishawaka, Ind.

If you write maker identify as IEN-2019

What do you do when your v-belts get loose or break?

1. ***Leave the drive alone*** . . . get more slippage, wasted power, excessive belt wear, uneven sheave wear and less production.
2. ***Slide the motor back*** . . . tight belts get too tight, life of belts and bearings is reduced.
3. ***Install a new set of belts*** . . . discarded belts mean wasted money.
4. ***Use VEELOS...*** the Adjustable V-Belt

Link construction permits quick installation. Easy adjustability provides controlled tension on each belt and eliminates loafers.



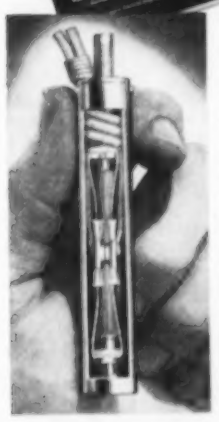
VEELOS THE LINE V-BELT

Write for free copy of Veelos Data Book. It gives full facts on Veelos—the belt that saves on operating and inventory costs.

MANHEIM MANUFACTURING & BELTING CO.
651 Manheim Street, Manheim, Pa.
Adjustable to Any Length • Adaptable to Any Drive

If you write maker identify as IEN - 2020

This catalog brings you all the data on THERMOSWITCH® Thermostats



How recent is the data in your file on temperature controls and detection devices? Do you know just how accurate controls can be? Are you up on the most recent designs?

That is what the Fenwal Catalog 400 is about. If your product or process calls for a sensitive and positive instrument for controlling temperatures . . . if you must have thermostatic switches resistant to shock, vibration and easy to install — you will find your answer here.

Your copy is ready. Send for Catalog 400. Also feel free to ask for Fenwal engineering assistance having to do with any temperature control problem involving heat, vapor level, radiant heat, pressure, and other variables. Write Fenwal Incorporated, 72 Pleasant Street, Ashland, Mass.

A Fenwal THERMOSWITCH control is so precisely engineered, compact and failure-proof that it is used throughout all industry wherever standards are the most meticulous.

Fenwal

THERMOSWITCH®

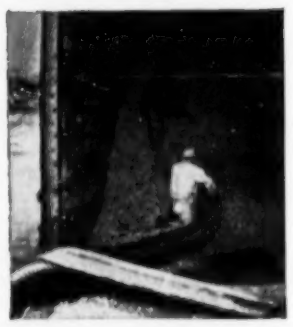
Electric Temperature Control and Detection Devices

SENSITIVE... *but only to heat*

If you write maker identify as IEN - 2021

DUST REMOVAL or MATERIALS HANDLING

You can install SPIRATUBE® yourself



Whether your application requires dust removal . . . or materials handling . . . you can set up your lines of SPIRATUBE to meet your requirements. AND . . . what's more important — you can do it yourself. That cuts downtime to a minimum, and enables you to keep your ducting system in operation to meet your production needs.

SPIRATUBE — the new type flexible tubing — connects quickly, easily to your present lines . . . and bends anywhere with minimum crimping. No turn is too short, no angle too acute. No elbows or special fittings to bother with in going around obstructions!

And — important to you too: The initial cost of SPIRATUBE is small . . . and its life equals — sometimes exceeds — rigid ducts.

Standard sizes for all requirements are immediately available from well-stocked distributors — coast-to-coast.

For all ducting systems:

FLEXFLYTE® SPIRATUBE® AYRTUBE®

Flexible Tubing CORPORATION

Guilford, Connecticut Pasadena 1, California

FREE! Full details on this amazing, cost-saving ducting. Fill in coupon and mail.

Please send me your new catalog on Flexible Tubing products.

My application is _____

Name _____ Title _____

Company _____

Address _____

City _____ State _____

IEN-2

NEW LITERATURE—Continued

Identify as IEN - 0120

INCLINABLE PRESSES . . Feature of new 20-page catalog on open-back inclinable presses in 6 to 80-ton sizes is a description of the clutch-brake mechanism. It uses compressed air to expand a rubber-fabric tube for a desired amount of grip. Federal Press Co., 512 Division St., Elkhart, Ind.

Identify as IEN - 0121

HYDRAULIC PRESSES . . Straight-side, post-type, double-action, gap-frame and special types including one to make 40-ft. lengths of 24 to 26-in. pipe. Information on all these, together with an operating schematic of the hydraulic circuit, is given in 24-page Catalog H-52. Verson Allsteel Press Co., 9325 S. Kenwood Ave., Chicago 19, Ill.

Identify as IEN - 0122

CENTRIFUGAL PUMPS . . 96-page Catalog I-52 presents information on self-priming, vertical, portable, also turbine pumps, rotary and reciprocating pumps, condensate return units. Deming Co., 184-88 Broadway, Salem, Ohio

Identify as IEN - 0123

HYDRAULIC PUMP . . One that is instantaneously reversible, that can be operated as a pump or motor without change, and that can be operated as a pump-motor-brake all at once. Sequence drawings in 8-page Catalog 5209 show how it works. Hydraulic circuit diagrams show use. Oliver Iron & Steel Corp., 12 Law & Finance Bldg., Pittsburgh 19, Pa.

Identify as IEN - 0124

PYROMETERS . . Portable surface instrument with top range from 300 to 1,200 deg. F. has extension arms for convex and rotating surfaces, flat surfaces, semi-fluid and molten materials. Catalog 168, 6 pages. Pyrometer Instrument Co., 90-94 Portland Ave., Bergenfield 21, N. J.

Identify as IEN - 0125

RECORD KEEPING . . Robot-Kardex machine brings any of 60 visible-index slides into position on a desk extension, all at the push of a button. Revised 12-page Booklet KD-512-1 tells how to install and operate it. Remington Rand Inc., 315 Fourth Ave., Room 1618, New York 10, N. Y.

Identify as IEN - 0126

REFRIGERATING . . Cold chambers, to minus 200 deg. F., for metal treating, expansion fitting, storage and process, 3 to 11 cu. ft. Bulletin T-1150-2, 4 pages. Bowser Technical Refrigeration, 752 Industrial Blvd., Terryville, Conn.

Identify as IEN - 0127

SEPARATING . . Compound gyratory action of Sweco machine suits it for wet or dry screening through coarse to 325-mesh. New 8-page bulletin presents operating sequence diagrams on this action, stresses the virtual nonexistence of transferred vibration. Southwestern Engineering Co., 4802 Santa Fe Ave., Los Angeles 58, Calif.

Identify as IEN - 0128

CONTOUR SHEAR . . Machine that will do inside cutting, beading and flanging of sheet metal parts to 10-gage mild steel and 11-gage stainless has throat depth of 48 inches. Details in 4-page Catalog TS on request. Wales-Strippit Corp., 361 Payne Ave., North Tonawanda, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2023

NEWCOMER CARBIDE . . . CONTROLLED QUALITY Carbides made in our own modern plant

With the "KNOW-HOW" gained from nearly a quarter-century of experience and the newest equipment available.

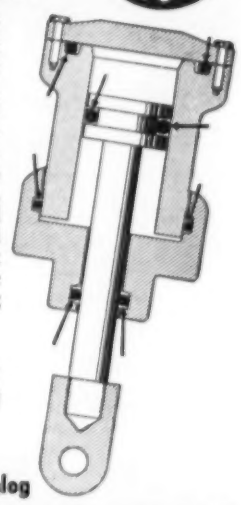
Every Newcomer representative is a qualified tool engineer with the ability to solve your most difficult problems.

NEWCOMER PRODUCTS, INC.
General Sales Offices
PITTSBURGH 21, PENNA.
Plants at LATROBE, PENNA.

If you write maker identify as IEN - 2024

O-RINGS by INJECTION MOLDING

Dependable Hydraulic Seals



Minnesota O-Rings function in air or gas systems as well as in hydraulic systems. Air cylinders . . . hydraulic valves . . . hoisting mechanisms . . . water pumps . . . bottling machines . . . refrigerators . . . motors . . . lubricators . . . are a few of their uses. Minnesota's exclusive injection process makes possible very close dimensions, uniformity in mass production and downright economy. We use special compounds of synthetic rubber to meet your exact requirements. Let us quote on your next hydraulic packing installation.

Manufacturers of all types of small rubber parts

Write for O-Ring Catalog

MINNESOTA RUBBER & GASKET CO.
3630 WOODDALE AVE., MINNEAPOLIS 16, MINN.

If you write maker identify as IEN - 2025

A TIGHT SEAL AT ANY PRESSURE

All night at 6000 psi without any loss of gage pressure.

This and other Shear-Seal CHARACTERISTICS are covered in Bulletin BVM-2

Low Handle Load
Not Critical to Dirt
Excellent Throttling
No Wire Drawing
High Flow Capacity
Low Maintenance

MANUAL VALVES

Vacuum to 6000 psi

pipe sizes to 1 ½ inch

. . . come in the following flow patterns: Shut-off, Manipulator, Four-Way Selector, and Dual Pressure Selector.

For complete technical information see our catalog in Sweet's 1953 File for Product Designers and in the Plant Engineer's File, or write for Catalog 2B-S on Manual Valves and Catalog 1B-2 on Solenoid Valves.

BARKSDALE VALVES

1566 E. SLAUSON AVE., LOS ANGELES 11, CALIF.

If you write maker identify as IEN - 2027

TO RAPIDLY EXHAUST HEAT SMOKE FUMES DUST

THE BURT F.E.F. VENTILATOR IS EXTREMELY EFFICIENT

If your problem is rapid spot removal of contaminated air, investigate Burt's new F.E.F. (Free Exhaust Fan) Ventilator. Two Dampers open wide automatically in operation—close automatically for thorough weatherproofing when motor is shut down. The airshaft functions as an absolute free opening. Seven sizes and seventeen motor choices provide capacities from 5,000 C.F.M. to 75,500 C.F.M.. For complete data see Sweet's, or write for Bulletin S.P.V.-18

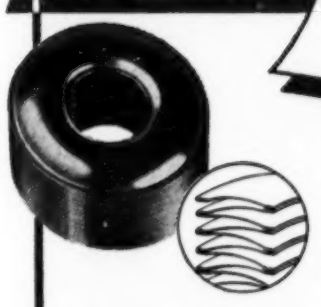
FAN & GRAVITY VENTILATORS • LOUVERS • SHEET METAL SPECIALTIES

The Burt Manufacturing Company
909 So. High St., Akron 11, Ohio

If you write maker identify as IEN - 2028

Can You Use BELLMETS?*

*Metallic Diaphragm BELLOWS with Specific Mechanical, Electrical and Thermal Properties



- Convolutions electrically insulated from each other
- Contour construction to resist pressures exceeding 500 PSI
- Materials heat resistant to 500° F.

Bellmets represent a unique development in welded diaphragm bellows. All welds either on the inside or outside diameter (depending on whether operating pressure is to be internal or external) are replaced with a dielectric bonding material. The bonds are strong, slightly resilient, highly resistant to heat, and insulate each end of the bellows from the other.

Bellmets have already solved problems in engine noise attenuation, pressure switch simplification, circuit control at high pressures. Wherever heat, pressure, or electrical characteristics present a problem, job-engineered Bellmets—in a wide range of sizes and specifications—may prove the ideal solution.

WRITE TODAY for complete information, outlining your specific problem or interest.

BREEZE CORPORATIONS, INC.
41 South Sixth St., Newark, N. J.

ANOTHER BREEZE MADE PRODUCT

If you write maker identify as IEN - 2029

New! No Other Nameplate Like It

AMERICAN DECAL Stik-Tite

Quick Easy Water Application | Instant Setting | For Almost Every Surface

Manufacturers everywhere are switching to the new American Decal STIK-TITE for quicker, easier application—greater service. Applied with water alone, there is no need for costly time consuming varnishes, cements or solutions.

In addition to adhering to ordinary surfaces—painted metals, wood, glass, etc.—the STIK-TITE permanently grips most problem surfaces such as bare metals, raw wood, crinkle finishes, irregular surfaces, plastics, baked enamel, fibre board, etc.

The American Decal STIK-TITE necessitates no special drying, or clean-up, allows immediate packaging.

Write today for complete information and samples

American Decalcomania Co.
4334 Fifth Ave., Dept. L, Chicago 24, Ill.
New York • Cleveland • Windsor, Ont., Canada

If you write maker identify as IEN - 2030

SNOW PLOW . . Engine driven, gathers and throws snow to one side

Source: BREADY TRACTOR & IMPLEMENT CO.
262212 Aurora Road, Solon, Ohio

Operator guides it

A screw rotates at the front of this new Sno-Master plow to gather and feed snow into the rapidly rotating blower blades behind the screw. These blades throw the snow upward and out along a deflector which can be set to direct it to either the right or left and to control the distribution. There is sufficient force to throw the snow about 25 ft. from the machine or to distribute it over a wide area.

Drive is by a 2½-hp. gasoline engine. The drive wheels are equipped with chains to provide traction. The machine will work its way in a single pass through snow piled to 2 feet.

If you write maker identify as IEN - 2031

CLAMP . . Molded Saran to hold wiring, sizes ⅛ to 1¼ inches

Source: HOLUB INDUSTRIES INC.
411-15 DeKalb Ave., Sycamore, Ill.

Resistant to acids, chemicals, oil

New clamp is available in 17 stock sizes for wiring installations. The Saran plastic is a tough thermoplastic material with good thermal properties and ability to insulate electrically. The material is pliable so the clamp can be opened to position over a wire, cable, pipe or tube. Edges are rounded. The company also announces new sizes of ethyl cellulose clamps, ranging from ⅛ to 3 inches.

If you write maker identify as IEN - 2032

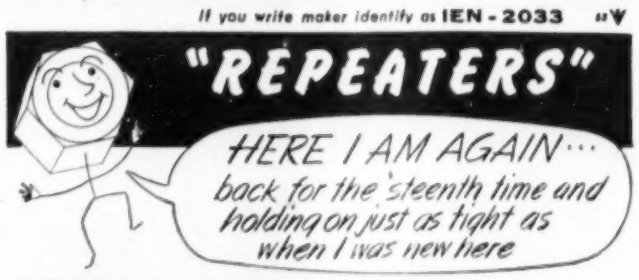
CUTTING . . Dicing machine converts plastic sheet into tiny cubes

Source: CUMBERLAND ENGINEERING CO.
P. O. Box 216-A, Providence 1, R. I.

Thermoplastic sheet materials, to ¼ in. in thickness by 14 in. in width, feed in between power driven rolls in this new dicing machine. The sheet moves from the feed rolls to ride between a stationary knife and 4 or 8 revolving knives that simultaneously cut it into tiny cubes. Input speed ranges from 10 to 125 fpm. depending on the user's requirements. Cube size is dependent upon the knife selection. Overall dimensions are 32 by 37 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2033



REPEAT APPLICATION GRIPCO LOCK NUTS do not "lose their grip", can be removed and re-applied over and over again without appreciable loss of locking effectiveness. Hold fast, every application, until removed with a wrench.

GRIPCO LOCK NUT
. . . locking action resists vibration, strain, oil or chemicals.

NEW GRIPCO "CLINCH" NUTS Hexagon pilot fits snugly into hexagon hole punched into metal. Pilot is then flattened out under pressure, clinching nut permanently in hexagon hole. Gives extra threading depth on thin metals or blind assemblies.

GRIPCO PILOT PROJECTION WELD NUTS
A production speeder. Pilot positions nut quickly and accurately and it is instantly attached by resistance welding.

GRIPCO COUNTERSINK WELD NUTS
Through countersink design, loose metal particles are shunted away from threads. No re-threading necessary.

Samples and prices on request. Specify type nut, thread and size.

5907R

GRIP NUT COMPANY
310-S S. Michigan Ave. Chicago, Ill.

If you write maker identify as IEN - 2034

DOUBLE-ACTION AIR CYLINDERS

Mounting	Bore				
Horizontal	1½"	2¼"	3"	4"	5"
Vertical	1½"	2¼"	3"	4"	5"
Face	1½"	2¼"	3"	4"	5"
Swivel	1½"	2¼"	3"	4"	5"

Length of stroke optional

The new Mead Air Power Catalogs shows the full line of single and double-acting cylinders, and air-operated Presses, Vises, Chucks, Hammers, Work Feeders — for Faster, money-saving production. Write today!

MEAD SPECIALTIES COMPANY
4114 NO. KNOX AVE., DEPT. E-23-A, CHICAGO 41, ILL.

If you write maker identify as IEN - 2035

The need for Dy-Namically Balancing every rotating part—especially those that spin at high speeds—is being recognized in every phase of industry. Select the "Bear" Machine that fits your budget and your operation from the..

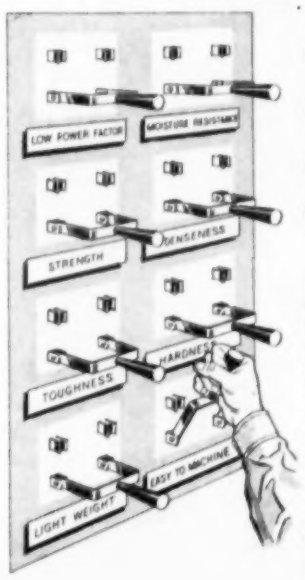
free DY-NAMIC BALANCING MANUAL!

Tells how you can easily, quickly, economically balance rotors, armatures, crankshafts, and any other part that turns, weighing from 4 oz. to 8 tons! See how to reduce wear, eliminate noise and vibration, improve all-around performance of finished product. Your copy sent without cost or obligation. Bear Mfg. Co., Dept. I-5, Rock Island, Ill.

6038

"BEAR"
STATIC AND DY-NAMIC BALANCING MACHINES
balance rotating parts weighing from 4 oz. to 8 tons

If you write maker identify as IEN - 2036



Choose the COMBINATION of properties you need

Light weight, strength, chemical and moisture resistance, hardness, toughness, density, high dielectric strength—Synthane laminated plastics combine them all in one easy-to-machine material. If your product—or a component—requires a specific *combination* of properties, it will pay you to investigate Synthane. The coupon below brings you full details.

SYNTHANE

Manufacturers of laminated plastics
SHEETS
RODS • TUBES
MOLDED-LAMINATED
MOLDED-MACERATED
FABRICATED PARTS

SYNTHANE CORPORATION
South River Road, Oaks, Pa.

Gentlemen:
Please send me the new Synthane Catalog without charge or obligation on my part.

Name _____
Address _____
City _____ *Zone* _____ *State* _____

If you write maker identify as IEN - 2037

NEW ZENITH MAGNETIC SOLENOID CONTACTORS

★ SOLENOID OPERATED
★ FINE SILVER CONTACTS
★ SIMPLIFIED WIRING

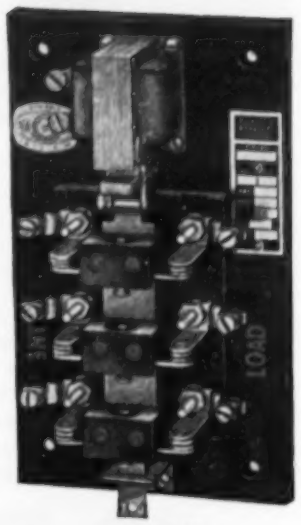
This ZENITH contactor is built to withstand the severe service demanded by loads based on Type-C lamps.

It is designed on the straight-line principle, with the solenoid being connected directly to the contact bar.

The advantage of this method of construction is its easy access to any part for quick inspection or service, without disturbing other parts.

Models: Size 1 — 25 amps. Size 2 — 50 amps.

Either size can be supplied in any number of poles.



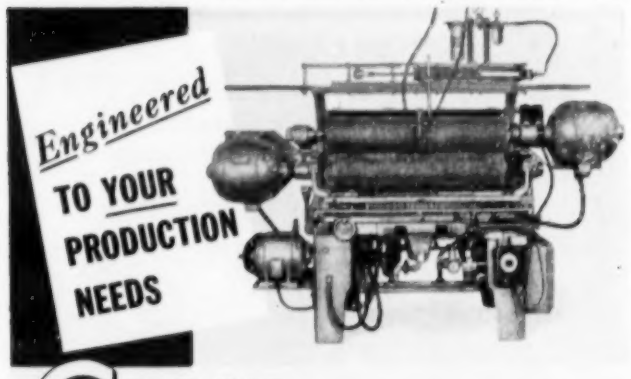
TYPE SC 33

SEND FOR FREE CATALOG

This big, illustrated catalog contains all the newest items in automatic control equipment made by Zenith! Write now for your Copy!

ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

If you write maker identify as IEN - 2038



CLAIR SURFACE FINISHING MACHINES

For Surface Finishing:
screw drivers, chisels, pliers, saws, wrenches, compacts, cigarette cases, fine silver, surgical instruments, fan blades, flat iron sole plates, many other similar items

Working closely with your engineers we will develop a custom machine designed for maximum surface finishing efficiency on your particular application. Totally enclosed, abrasion-proof hydraulic circuits assure uninterrupted production and vastly reduced maintenance costs.

CLAIR MANUFACTURING CO., INC.
Specialized Machine Equipment For Glazing and Polishing Operations
OLEAN, N. Y.

If you write maker identify as IEN - 2039

Announcing the New

Shaft-Mounted SPEED REDUCER

"Power at the Speed you Need"

Find out why Shaft-King is such a tremendous advance over all other speed reducers in its range. Let us prove to you that it can increase profits by reducing down-time, operating costs, maintenance, housekeeping and investment. *Send the coupon below for complete Shaft-King information!*

At the PROFIT End of the Machine

Power Transmission by AMERICAN PULLEY COMPANY

The American Pulley Company
4240 Wissahickon Avenue, Philadelphia 29, Pa.
Gentlemen:
☐ Please send your new Shaft-King Catalog
☐ Send name of local Shaft-King distributor
☐ We need help on a slow speed drive problem
Name
Firm
Address
City Zone State

NEW LITERATURE—Concluded

Identify as IEN - 0129

STAPLING . . Close a filled carton from the outside by placing the Boxer hand tool on the flap and pressing a lever. Sequence pictures in 4-page Bulletin 101 show how. International Staple & Mach. Co., 801 Herrin St., Herrin, Ill.

Identify as IEN - 0130

TEST BATHS . . Constant-temperature units which you can assemble from standard components to suit your purpose. Bulletin, "Constant Temperature Baths," gives catalog data on these components and on a 10-gal. bath with electronic control. Fisher Scientific Co., 719 Forbes St., Pittsburgh 19, Pa.

Identify as IEN - 0131

TRUCK ATTACHMENTS . . That increase the usefulness of your power lift truck to do specialized handling are shown in new 4-page Form B-329. They include a ladle pourer, a bulk material scoop, drum grab, a bale clamp. Elwell-Parker Electric Co., 4060 St. Clair Ave., Cleveland 3, Ohio

Identify as IEN - 0132

TRUCK ATTACHMENT . . Palletized handling of fork-truck loads without pallets is done by the Pak-Loader attachment, a pantograph-arm pusher which strips the load off a carrying platform. Pictured in 4-page Bulletin P-1173-A. Yale & Towne Mfg. Co., 11002 Roosevelt Blvd., Philadelphia 15, Pa.

Identify as IEN - 0133

TUBE FITTINGS . . Picture comparison of SAE 37-deg. flare, SAE 45-deg. flare, compression, inverted flare, threaded-sleeve, Ermeto tube fittings is given at the start of new 32-page Catalog F-1456-B. Text lists available types and sizes, shut-off cocks, service tools, pressure ratings. Weatherhead Co., 302 E. 131st St., Cleveland 8, Ohio

Identify as IEN - 0134

WATER TREATING . . Equipment for industrial water softens, filters, removes iron. It comes in sizes from 150,000 to 950,000 grain gallons. Bulletin, 4 pages. Uniflow Mfg. Co., Lake & Kuebler Sts., Erie, Pa.

Identify as IEN - 0135

STUD WELDING . . The plant behind the product is described in picture form by new 8-page booklet on the company and its threaded studs that apply by arc welding. KSM Products Inc., 6510-14 Park Ave., Merchantville 8, N. J.

Identify as IEN - 0136

WELDING TORCHES . . 40-page Catalog 150 shows complete gas welding outfits for applications from heavy work on down to jewelry manufacture. It also shows cutting torches, tips, regulators, adaptors, hose, goggles. Modern Engineering Co., 3413-17 W. Pine, Dept. 24, St. Louis 3, Mo.

Identify as IEN - 0137

X-RAY . . Radiation shielding chart, specifications for X-ray protective materials, detail drawings on construction features of X-ray rooms, radioisotope laboratory equipment are included in new 76-page Catalog W-52. Bar-Ray Products Inc., 213 25th St., Brooklyn 32, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2040

MERRILL MATERIALS HANDLING DEVICES

3-M-2

MERRILL BROTHERS
56-14 ARNOLD AVENUE MASPETH, N. Y.

If you write maker identify as IEN - 2041

LAWLOR MOPWRINGERS

FOR EASIER MOPPING GET A LAWLOR NO. 2

EASIEST turning wringer made: there are bearings at ends of rollers.

EASY to bring rolls together: foot lever is perfectly balanced.

Copied but never duplicated!

EASY to move wringer; self-adjusting front casters raise metal feet from floor when you're ready to go. The LAWLOR No. 2 accommodates any standard round, galvanized pail up to 16-quart capacity. Net weight of wringer—23 pounds.

LAWLOR No. 6 TWIN is like the No. 2 Wringer in general construction, but accommodates two pails.

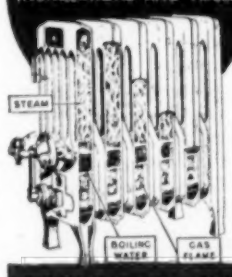
Write for Catalog of Mopping Tanks, Wringers, Floor Scrub Wax-Polishing Machines for every kind and size floor.

S. C. LAWLOR CO. 120 North Aberdeen Street Chicago 7 • Illinois

Visit Booth 159, N. S. S. A. Convention
Hilton Hotel, Chicago, Mar. 22-25

If you write maker identify as IEN - 2042

SEND FOR COMPLETE INFORMATION, INCLUDING OPERATING PRINCIPLES, INSTALLATION DATA, TYPICAL INSTALLATIONS AND PRICES.



STEAM HEAT! WHERE YOU WANT IT! WHEN YOU WANT IT!

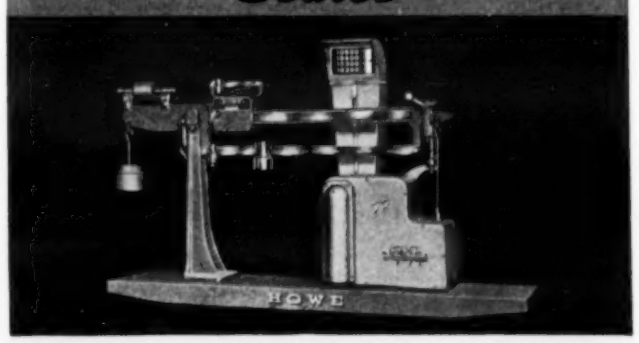
Why should your office employees suffer with the cold this winter—when it's so easy to keep them warm and comfortable with Clow Gasteam Radiators. Quick steam heat! Fingertip control! No hot water pipes, boiler or furnace room to rely on! Inexpensive, because you heat just the area where it's needed—not the whole plant.

Available for City, Butane or Propane Gas

JAMES B. CLOW & SONS
201-299 N. Talman Ave., Chicago 80, Ill.

If you write maker identify as IEN - 2043

HOWE Scales



77 HOWE Weightograph

NEW PROJECTION TYPE WEIGHT INDICATION

Here is the latest development in automatic scale indication!—The new HOWE 77 WEIGHTOGRAPH—a weighing accessory which can be attached to any make of beam scale. Modern optical projection and eye-level periscope instantly flash exact weight in large, illuminated, crystal-clear figures under all sorts of light including daylight. Check the many "plus" features of the 77 HOWE WEIGHTOGRAPH for simple, fast, accurate and trouble-free weighing on your beam scale.

Write for descriptive folder Form No. 668 **Dept. IE-2**

The HOWE SCALE Co.
RUTLAND, VERMONT

If you write maker identify as IEN - 2044

REDUCE THE OVERHEAD THAT IS UNDERFOOT

Darnell Casters

Free Manual

DARNELL CORP., LTD.
DOWNEY, (Los Angeles County) CALIF.
60 Walker Street, New York 13, N.Y.
36 North Clinton, Chicago 6, Illinois

If you write maker identify as IEN - 2045

Simpson

multi-purpose MICROTESTERS STAY ACCURATE!

These instruments are 3"x5⅞"x2½"—weigh 1¼ to 1½ lbs.—shipping weight, 3 lbs. Prices shown are dealer's net. Except where otherwise indicated test leads with prods or test leads with alligator clips and insulated sleeves are $1.25 extra.

AC AMMETER	Model 370	Price $19.95
AC VOLTMETER	Model 371	Price $18.40
OHMMETER	Model 372 with Test Leads	Price $25.50
DC MILLIAMMETER	Model 373	Price $19.95
DC MICROAMMETER	Model 374	Price $23.00
DC AMMETER	Model 375	Price $19.95
AC VOLTMETER	Model 376	Price $19.95
DC VOLTMETER	Model 377	Price $19.95
AC MILLIAMMETER	Model 378	Price $22.60
BATTERY TESTER	Model 379 with Test Leads and Operator's Manual	Price $23.70

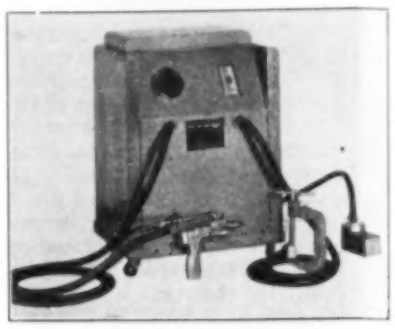
BURTON BROWNE ADVERTISING

Simpson ELECTRIC COMPANY
5200 W. Kinzie Street • Chicago 44, Illinois
Phone: COlumbus 1-1221
In Canada: Bach-Simpson, Ltd., London, Ont.
World's Largest Makers of Electronic Test Equipment

If you write maker identify as IEN - 2047

WELDING . . Repair equipment for holes and cracks in metal parts

Source: METALLIZING COMPANY OF AMERICA
3522 W. Carroll Ave., Chicago 24, Ill.



Ask for Bulletin D1A

Dot-Weld trade names new equipment representing further development of the company's original Nervous Weld equipment for casting repair, previously described IEN-6644-44. It consists of a single-phase transformer with the necessary controls and a pistol type head that carries an electrode for metal deposit in holes, cracks, defective area. The electrode can be aluminum, bronze, copper, nickel, zinc. Repair application can be made on ferrous and non-ferrous metal parts.

The head is equipped with a compressed air connection to operate a vibrator. It causes the electrode to reciprocate axially through a small amplitude at high speed. The movement results in alternately making and breaking the circuit through the electrode, work and transformer, thus causing the electrode to heat to the point where the metal will be deposited. At the same time compressed air issues through orifices surrounding the electrode in the nozzle to assist in the depositing action and to prevent over-heating the work.

The operator holds the electrode at a 30-deg. angle with the work surface to deposit metal, then moves the head so the electrode is at 90 deg. and employs the vibrating action to peen the deposit in place. A trigger feeds the electrode forward manually. Standard equipment for operation on 220-volt 60-cycle single-phase ac. lists complete at $525.

If you write maker identify as IEN - 2048

FIRST AID . . Resuscitator provides artificial respiration quickly

Source: OHIO CHEMICAL & SURGICAL EQUIPMENT CO.
1402 E. Washington Ave., Madison 3, Wis.

With instructions

Model 116 designates a recently improved resuscitator consisting of a bellows with about 1,600-cc. capacity, a face mask, an intermediate valve, valves for intake of air and oxygen and a relief valve to limit pressure to 20 mm. of mercury. All of the valves operate automatically. The equipment is packed in a carrying case.

The bellows is operated at normal respiratory rate of about 15 to 18 cycles per second. Noxious or inert gases can be expelled from a patient's lungs in a short time. It is not possible to build up carbon dioxide. When oxygen is to be used, a tube leading from the oxygen supply is attached to the inlet on the resuscitator and a flow of 5 to 8 liters per min. is introduced. This provides between 50 and 60 per cent of oxygen when 500 cc. are used for each inflation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2049

ARE YOUR ELECTRIC TRUCKS GUILTY OF "4 O'clock Letdown?"

READY-POWER DRIVE
for Full Efficiency ALL THE TIME!

Only Ready-Power gives your electric trucks full efficiency for every minute of every hour . . . all day long. Ready-Power-equipped trucks are so easy to operate, drivers are more efficient, too. Unlimited power plus alert drivers add up to more ton-miles per hour.

CONTINUOUS-DUTY POWER UNITS

Your Truck Is No Better Than Its Power

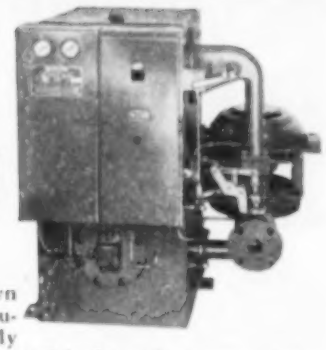
The READY-POWER Co.
3830 Grand River Ave., Detroit 8, Michigan
Manufacturers of Gas and Diesel Engine-Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks

If you write maker identify as IEN - 2050

DUNHAM VACUUM PUMPS

PEP UP steam circulation

PULL DOWN fuel costs



You can't help but pull down fuel costs with Dunham Vacuum Pumps. Since they easily pull—and maintain—up to 26 inches of vacuum, you can count on better steam circulation . . . shorter "heat up" periods . . . lower operating costs.

Installation and maintenance costs are low, too. Three anchor bolts secure pump. Few piping and wiring connections to make.

And with motors mounted to protect against surface water . . . with no close tolerance parts to get out of adjustment — your maintenance costs are amazingly small.

For full information about space-saving, money-saving Dunham Vacuum Pumps, Write for Bulletin 1401-11.

DUNHAM C. A. DUNHAM CO.
400 W. Madison St., Chicago 6, Illinois

Quality first for fifty years

If you write maker identify as IEN - 2051

GE LAMPS ...via Graybar

Free Lamp Catalog gives selection data on wide range of G-E lamps.

There's no substitute for proper lighting where visual comfort is the first consideration . . . just as there's no substitute for G-E incandescent lamps in commercial, residential or industrial aplications.

Illustrating and giving basic selection data, this handy reference bulletin will help you select the right lamp from among the thousands of incandescent G-E lamps available via Graybar. For any lighting need, Graybar offers the widest selection of lighting units and incandescent, fluorescent or mercury lamps available from any single source — you can be sure of impartial recommendations.

In addition, Graybar Lighting Specialists will be glad to help you plan efficient lighting systems either indoors or outdoors. (Note: if you are a quantity user of lamps, be sure to discuss the advantages of our lamp contract service with your local Graybar Representative.) *Graybar Electric Company, Inc. Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.* 314-122

Call Graybar first for . . . Everything Electrical GraybaR ELECTRIC COMPANY

If you write maker identify as IEN - 2052

Get BETTER Control with POWERS FLOWRITE VALVES

1 VALVE TOP—Durable moulded neoprene diaphragm (1) has positive sealing bead which provides increased sealing action with increasing control pressure. Efficient diaphragm form insures ample and constant operating power thru full travel. Piston Plate Assembly (2) has a free floating thrust plate which absorbs side thrust. Closely guided piston plate maintains stem in accurate alignment.

3 ADJUSTING SCREW—Ball bearing non-rising type with starting pressure adjustable from 0 to 17 psi. Has enclosed rust proofed steel spring for full travel in 5 or 10 psi. control pressure change.

4 BONNET ASSEMBLY—Polished stainless steel stem in preformed lubricated metallic packing insures long life and low hysteresis.

VARIETY of VALVE BODIES
Sizes ½" thru 8"
For line pressures below 250 psi. Rugged construction to withstand piping strains.
Write for Circular FMV

Reduce Maintenance with FLOWRITE VALVES

THE POWERS REGULATOR COMPANY
3400 Oakton Street, Skokie, Illinois
Established 1891 • Offices Over 50 Cities • See Your Phone Book

If you write maker identify as IEN - 2053

NEW T-J

Spacemaker

AIR CYLINDERS

Saves up to 40% Space!

Streamlined construction of the new T-J Cylinders *eliminates tie rods . . . reduces head size . . .* and *saves up to 40% in mounting space!* In addition, a new high in strength is achieved with solid steel heads and heavy wall seamless steel body . . . leakproof construction . . . extra high safety factor. Cylinder walls are precision honed and hard chrome plated for long-life efficiency. Available with new T-J Super Cushion Flexible Seals. Many standard sizes and styles . . . cushioned and non-cushioned . . . for pushing, pulling, lifting, clamping or control jobs. Write for bulletin 8152. The Tomkins-Johnson Co., Jackson, Michigan.

37 YEARS EXPERIENCE T-J

TOMKINS-JOHNSON

If you write maker identify as IEN - 2054

Here's Efficient, Dependable Air Supply

JOY WL-80

"UNITAIR" COMPRESSOR

- ★ A size for *every* standard motor rating
- ★ Force-feed lubrication
- ★ Small floor-space requirements
- ★ 81 to 640 CFM
- ★ Two Stage . . . Air cooled

And here's FREE HELP!

Bulletin A-56 . . . new, with 16 fact-filled pages and a Selector Chart. Write for it to select the right compressor for your needs.

Consult a Joy Engineer

W&D 13086

JOY MANUFACTURING CO.

General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO

If you write maker identify as IEN - 2055

THIS *Free* SAMPLE KIT

CMD ANTI-SCORING LUBRICANT

Will show you how to:

- **Increase your production**
- **Prevent scoring and seizing**
- **Protect bearing surfaces better**

Here is a free sample kit of CMD Anti-Scoring Lubricants, designed for *your* use on *your* machines so that you can see how it will help increase production by preventing costly shutdowns. Also CMD lubricants positively prevent seizing, galling, scoring and are non-corrosive. Any bearing surface is absolutely protected with CMD. Send for your free kit and use CMD on lathe centers, steady rests, cams, taps and in many other applications where positive lubrication is demanded under high pressures. Do it today and see if you don't think CMD is tops!

Use it for
LATHE CENTERS
DIE SET POSTS
MACHINE WAYS
THRUST BEARINGS
CAMS—DIES—TAPS
GRINDING CENTERS
MILLING MACHINES

FREE SAMPLE KIT

Please send, under no obligation to me, Free Sample kit No. 32 containing CMD Lubricants.

Name _____

Company Name _____

Address _____

City _____ State _____

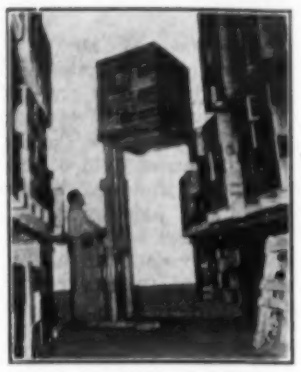
Chicago Manufacturing and Distributing Company
1904 West 46th St., Chicago 9, Illinois

CHICAGO MANUFACTURING & DISTRIBUTING CO.

If you write maker identify as IEN - 2056

TRUCK . . Electric fork lift design for close quarters handling and stacking

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.



Note high lift

Warehouser is a new rider type motor operated fork lift truck in which the forward wheels straddle the load at the front to minimize overall truck length to operate in close quarters. The new unit will turn and stack at right angles in 5 or 6-ft. aisles. It can be run into elevators and operated on flooring that would not sustain heavier ride type electric lift trucks in service.

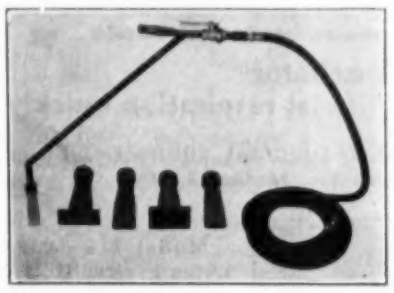
The travel motor is gear connected to the travel wheel in an assembly that is rotated by a hand wheel for steering to make a turn in a 200-deg. arc. The operator rides beside the power unit on a protected corner platform. Power is turned off and the brakes are applied when he leaves this platform.

Ratings are 1 and 1½ ton with load lift maximum at 133 inches. The single hydraulic lift cylinder does not interfere with operator visibility. The battery is mounted on rollers in an enclosed compartment for quick removal from top or side.

If you write maker identify as IEN - 2057

SEALING . . Compound applicator flows material into concrete joints

Source: PHILLIPS PRODUCTS INC.
1440-44 W. 10th St., Cleveland 13, Ohio



It fills the cracks

Applicator No. 77 is a new combination of handle and valve equipped pipe with interchangeable nozzles and a fitted length of hose to apply on the pressure side of a sealing compound pump. The handle on the applicator is employed to guide the nozzle and the flow valve to control movement of the compound from the pump to the nozzle to fill a crack or joint in an apron, runway, highway, drive, ramp, sidewalk, bridge deck, loading platform or factory floor. A set of three nozzles is supplied with each unit for joints ranging from ¼ to ½ in. in width.

Identify as IEN - 2058

No chance that gas or electricity will be turned on accidentally when an appliance or burner is equipped with the new Patent Button Company's safety Spin Free knob. It turns free until it is pressed in and held there while being turned. It releases as soon as pressure is released. It is made of molded white Plaskon urea plastic which will not burn and and is heat and scratch resistant and non-electrostatic.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2059

Bearing "Bobbles"?

PITCHLIGN

Trade Mark

Roller Bearings may be the answer

Find Out!

RBC's PITCHLIGN bearings use a new type of 4-way roller control applied so that maximum efficiency is always obtained . . . rollers will not cock or jam as a result of incidental misalignment. PITCHLIGN saves weight, saves money—has the longest working life of any interchangeable bearing on the market. Get the facts! Write for Bulletin SF. 1066.

WRITE TODAY!

RBC

ROLLER BEARING COMPANY OF AMERICA
TRENTON, N. J.

If you write maker identify as IEN - 2060

SPEED LOAD HANDLING

for Truck, Shop or Machine

UNIT *utility* HOIST

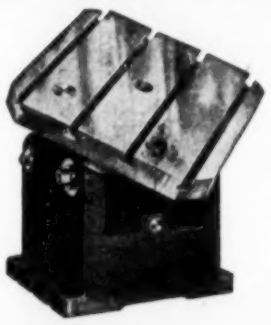
Hydraulically operated Unit Utility Hoists can speed and ease handling of 1000 to 2000 lb. loads around your trucks, shop or machines, and the hoist itself can be switched from the truck, floor or machine mount in seconds. Three lifting points and boom extension give a wide working range. Hoist swings 360° on truck and locks securely in traveling position. Many uses in every plant.

Write today for latest information

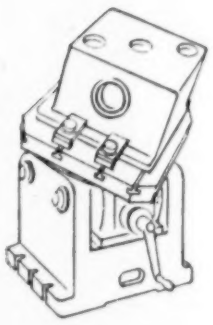
UNIT MFG CO. 1221 Harmon Place
Minneapolis 3, Minnesota

If you write maker identify as IEN - 2061

universal tables



save up to 50% of set up time on radials and boring mills



With one set up on Cincinnati Gilbert universal tables, you can drill at any angle up to 90° on five sides of a cube. Special feature: four-point support of the work in the lowered position takes strain off the worm, provides greatest possible rigidity of the work, best insurance of accuracy. Table sizes: 22" and 27" square. Height: 22". Four ¾" tee slots. Write for Bulletin 749.

THE CINCINNATI **GILBERT** MACHINE TOOL COMPANY
3366 BEEKMAN ST. • CINCINNATI 23, OHIO

RADIALS
BORING MILLS
ACCESSORIES

If you write maker identify as IEN - 2062

Stop CORROSION in your Steam System WITH CORAVOL

When fed to your steam system, **CORAVOL:** (1) *prevents* corrosion in steam and condensate lines, (2) *cleans out* clogging rust deposits resulting from previous corrosion. Thus, **CORAVOL** protects lines, increases the effectiveness of heat transfer surfaces, restores original capacity of lines and the operating efficiency of valves and traps.

CORAVOL is part of a complete technical service which provides special chemical formulas for:
Boiler Feed Water . . . Foam Prevention . . . Hot Water Supply . . . Refrigerating Brine . . . Cooling and Condenser Water . . . Rapid Scale Removal . . . Coagulation . . . Algae Control.

Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Missouri—for complete FREE data about the **CORAVOL** process.

Western Chemical Co. is owner of U. S. Patent No. 2053024 covering the use of volatile amines in steam systems.

WESTERN CHEMICAL CO.
715 WASHINGTON • KANSAS CITY, MO.

If you write maker identify as IEN - 2063

CONTROL COSTS

Stop human errors in reading, remembering, recording! Toledo Printweigh Scales provide accurate printed weights . . . *accurately* recorded. Send for bulletin 2021. Toledo Scale Co., Toledo 1, Ohio.

TOLEDO®
Headquarters for SCALES

If you write maker identify as IEN - 2064

It puts the Squeeze on Maintenance Costs!

A-C Current—five full scale ranges of 1000/250/100/25/10 amperes, with range overlap for good readability. Measurements under 10 amperes readily obtained.

A-C Voltage—three self-contained ranges of 700/350/175 volts insure accurate readability, in upper half of scale. Instrument insulated for 750 volt service.

Isolated Voltage and Current—with circuits insulated from each other, instrument can be connected to both voltage and current sources at same time.

Convenient 6 position switch—easily operated with gloved hand, a flick of the thumb selects any current range, or the Volts position.

Adjustable pointer stop—red stop facilitates measuring starting current of motors.

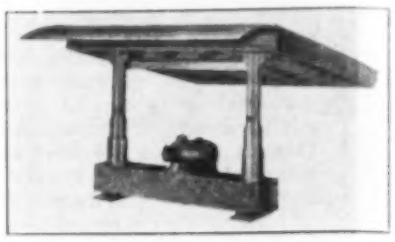
Here's the instrument that produces big savings by slicing hours off maintenance schedules . . . produces worth-while revenue by forestalling costly repairs and shutdowns. Built to WESTON standards of safety, accuracy and dependability. Also available for A-C Ampere measurement only. Order through your local representative, or write . . . WESTON Electrical Instrument Corporation, 617 Frelinghuysen Ave., Newark 5, N. J. . . . *manufacturers of Weston and Tagliabue instruments.*

WESTON *Instruments*
9566
. . . TO INDICATE—RECORD—CONTROL

If you write maker identify as IEN - 2066

ELEVATOR . . Motor driven ramp raises and lowers in shipping platform

Source: KARL A. HERMAN CO.
409-13 Fuller Ave. N. E., Grand Rapids 5, Mich.



Leitelt design

Elevating action is by means of two screws in this new loading ramp. The screws are connected to a geared motor mounted on the base beneath the platform. Two platform sizes measure 6 by 6 ft. and 6 by 8 ft. Rated capacity is 10 ton of dead load or 7½ ton of live load per axle. At the front of the platform is a 15-in. hinged nose plate.

The motor is operated by a reversing control to raise or lower and hold in any set position. Intended installation is in a recess cut into a loading platform.

If you write maker identify as IEN - 2067

PLASTIC . . Glass mat laminate impregnated with melamine resins

Source: SYNTHANE CORP.
50 S. River Road, Oaks, Pa.

Combines fire and arc resistance

The company announces availability of a new Type G-8 laminated plastic sheet in which weaving operations have been eliminated by employing a glass fiber mat impregnated with melamine resins. Mechanical properties are less directional than those of the previously announced woven base laminate. Production cost is correspondingly reduced.

The new sheet is available in thicknesses starting at 1/16 in. and in width and length measuring 36 inches. Flexural strength, flat-wise in a sample measuring ½ in. in thickness, is 24,000 lb. per sq. in. in lengthwise direction. It is 20,000 lb. per sq. in. in crosswise direction. The material is available to suppliers of electrical and power equipment. It also is suited for use where chemical resistance is required, as in plating and photographic work.

If you write maker identify as IEN - 2068

BELT FASTENING . . Drive-in unit to join and to repair conveyor belts

Source: FLEXIBLE STEEL LACING CO.
4610 Lexington St., Chicago 44, Ill.

No guide holes needed

One plate length of three teeth on each side, two long and one short, characterizes the construction of this new one-piece Turtle conveyor belt fastener. It is available in Monel Metal, plain or stainless steel and Everdur. The one size, available at present, is suited to repair rips in conveyor belts measuring 3/8 to 9/16 in. in thickness and to join medium duty belts measuring 7/16 to 9/16 in. in thickness. The fastener is driven into place, as many as required to complete a connection being located side by side.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2069

The new Bellows HAN-D-AIR CLAMP is a spring return, single acting miniature air cylinder. 1⅛" bore develops 100 lbs. of pressure at 100 lbs. of air. (Power factor 1 to 1). 1" stroke. Threaded 5/16" diameter piston rod. Universal mounting: can be mounted horizontally, vertically, side, front flange, rear flange or front pivot. Overall size 4" long by 1½" square. 1/16" heavy wall brass cylinder; ⅝" heads; oil resistant "U" cup; tension balanced spring.

ORDER TODAY — Dept. IEN-253 1249

The Bellows Co.
AKRON 9, OHIO

If you write maker identify as IEN - 2070

Protects AIR TOOLS AND EQUIPMENT

against rust, scale and condensation in the air line . . . provides constant lubrication

The Keller Lubricator-Filter operates automatically when air tools or equipment are in operation. Filter removes moisture as well as solids—easily cleaned by opening drain cock at bottom. Oil feeds from the lubricator through an upright wick—no flooding or waste when tools are not in use.

Transparent bowls show when filter needs draining, or when light spindle oil should be added to lubricator. Write for descriptive Bulletin #65-5.

KELLER TOOLS

Send for **illustrated descriptive bulletin and detailed information**

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 2071

Floors reinforced with HEXTEEL® or FLOORSTEEL® LAST 25 YEARS!

No personal injuries, no spillage from trucks—due to defects in floors—when you reinforce with *Klemp's* patented floor armors! Even in 1978, there will be no ruts, pot-holes, cracks or other dangerous disintegration! Use *Klemp's* FREE engineering service—or write TODAY for "Instructions for Laying *Klemp* HEXTEEL and FLOORSTEEL." No obligation.

KLEMP

KLEMP METAL GRATING CORPORATION
1371 North Branch Street • Chicago 22, Illinois

If you write maker identify as IEN - 2072

MAXAW 800
magic pivot does it!

HEAVY DUTY—ALL BALL AND ROLLER BEARING—INDUSTRIAL QUALITY

$89.50

Out-performs saws selling up to $145!

Here's the saw that bears down with that *extra cushion* of power and sings through the tougher cutting jobs in maintenance and industrial sawing. Cuts full 2-in. rough or semi-dressed lumber *with blade to spare*—2¾" on a straight cut, and 2 9/32" on a 45° bevel. **magic • pivot** does it!

And **magic • pivot** cuts down saw weight . . . MAXAW 800 weighs only 14 lbs.—⅓ less than conventional 8-in. saws . . . puts less handicap on men and muscles. Get all the facts—do more—save more—with **magic • pivot** MAXAW 800!

Free Pamphlet!— Find out what **magic • pivot** can do for you. Send for Pamphlet 1-33.

Cummins-Chicago Corp.
DIVISION
Cummins INDUSTRIALS • Cummins Portable Tools
4700 N. Ravenswood Ave. • Chicago 40, Illinois
IN CANADA: 334 Sauder Ave., Toronto

If you write maker identify as **IEN - 2073**

BOSTITCH T5 TACKER

One in the hand is worth two men with hammers and tacks!

- Just about twice as fast—that's how manufacturers and contractors compare the Bostitch T5 Tacker to hammer and tacks.
- There are other big advantages. The T5 Tacker permits accurate locating of staples, even in tight spots. Drives staples to within 1/16" of corners, penetrates deep into hard or gummy woods. One-hand operation leaves other hand free for holding or aligning material. Equally important, workers like it.

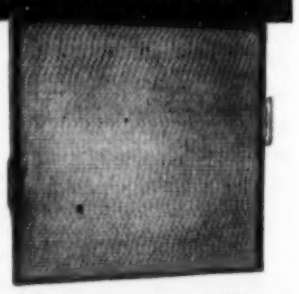
BOSTITCH AND FASTER fastens it better with wire

For more information about the Bostitch T5 Tacker and for application details, write BOSTITCH, **642** Mechanic St., Westerly, R. I.

If you write maker identify as **IEN - 2074**

YOURS FREE!

Farr Company Offers a Competent Staff of Field Engineers Plus Laboratory Services to Assist You with Your Air Filtration Problems



Selection of the proper air filters to meet your exact needs is most important. For this reason, Farr Company maintains competent field and laboratory engineers who are well-qualified to determine the best type of filter needed to solve your particular problem. This free service can be invaluable to you in guaranteeing complete satisfaction with your air handling system.

LATEST AIR FILTER TESTING METHODS ASSURE YOU of PEAK PERFORMANCE

After years of research, Farr engineers have developed a radically improved method of measuring filter efficiencies that takes the guess work out of air filtration. Now, for the first time, filter performance on your job can be predetermined. This eliminates costly mistakes and needless expense. This is just one of the many money-saving services available to you *at no cost*. Write for full information on FAR-AIR* products.

PANEL FILTERS — FAR-AIR panel filters are available in many types and sizes. Each design has been engineered for peak performance and substantial economy over ordinary types.

SELF WASHING FILTERS—These completely automatic units are available to meet any CFM requirement. They quickly pay for themselves in greater efficiency and drastically lowered maintenance costs.

ENGINE FILTERS — Many types and sizes of engine and compressor filters are available or can be engineered to your requirements.

ROTARY COOLERS—These efficient, economical units have proven highly successful under hot, low humidity climatic conditions. They are available for commercial and home use.

*Trade Mark Reg.

FAR-AIR FILTERS "Better by Farr"

Whatever your air filtering problem is, it will pay you to mail the coupon today for expert engineering assistance. Remember, this is a FREE SERVICE!

FARR COMPANY
Manufacturing Engineers
CHICAGO · LOS ANGELES · NEW YORK
Mf'd under license by Control Equipment Co., Ltd., Montreal

FARR COMPANY, P. O. Box 10187, Airport Station, Los Angeles 45, California

Gentlemen: Send me complete information on FAR-AIR products. I would ☐ would not ☐ require engineering assistance.

Name _____
Company _____
Address _____

If you write maker identify as **IEN - 2076**

DRILLING . . Vertical machine rates 1 in. in steel, 13 in. throat

Source: KURT ORBAN CO.
204 E. 43rd St., New York 17, N. Y.

Made in Germany

Ball bearing spindle in this new Alfing heavy duty drilling machine is carried in a sliding head for adjustment through 6 in. on the machine column, in addition to the 9-in. feed stroke for the spindle itself. Drive is by a second head mounted solidly at the top of the column. Both heads are enclosed to protect the operating mechanisms.

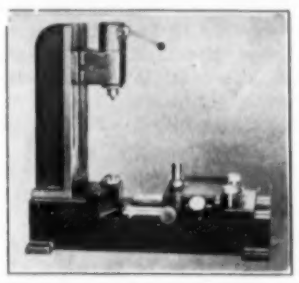
Drive is by a 3½-hp. motor with either flange mounting or V-belt connection. Eight spindle speeds range from 150 to 1,640 rpm. Three power feeds are from 0.003 to 0.009 in. per spindle revolution. The power feed can be engaged or disengaged in any position of the spindle. Drill depth is set by adjusting an indexing stop.

Maximum distance, spindle to table, is 23 inches. Table adjustment is through 12 in. vertically from 22¾ in. above the base. Replacement parts are available from the Kurt Orban Service Center in Cleveland, Ohio.

If you write maker identify as **IEN - 2077**

GAGE . . Roll fixture for gears checks size, eccentricity and finish

Source: MICHIGAN TOOL CO.
7169-73 E. McNichols Road, Detroit 12, Mich.



For piece inspection

Cluster gears and similar assemblies with integral shafts and centers are checked for size, eccentricity and roll smoothness in this new Model 602-A bench-type fixture. The gear to be checked is mounted between the centers on the vertical overarm. These centers can be adjusted from 2 to 10 in. apart.

Checking is in connection with a master gear mounted on the vertical spindle on the spring backed ball mounted gage equipped test table. Turning the gear manually causes the dial indicator to show variations. The fixture measures 29 by 9½ by 26¼ inches. It can be employed in connection with the company's Model MTR-50 automatic recorder on which the variations can be charted permanently.

Identify as **IEN - 2078**

Raymond A. Haas, materials handling engineer for Electric Storage Battery Company, has installed General Electric radio telephones on eleven lift trucks that operate in the company's 19 acre plant. There is also a central dispatcher's station through which two-way talk can be maintained with any truck. Present traffic is about 90 calls per day.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 2079**

KENDALL MILLS... solves tough handling problem

Buschman CABLE CONVEYORS

SPEED COTTON MILL'S DOUBLED CAPACITY

Three Buschman "Universal" Cable Conveyors carry in-process cotton from one department to another in Oakland Plant of Kendall Mills, supplier to Bauer and Black, maker of famous Curity surgical gauze dressings.

Buschman Cable Conveyors, over 2400 ft. in length, smoothly handle high production of this enlarged modern mill. Standard stock units, ease of installation, lower initial cost, lower maintenance cost, small power requirements, time saving and floor-space saving features are reasons why "Universal" is in greater demand than ever, for handling light and medium weight loads.

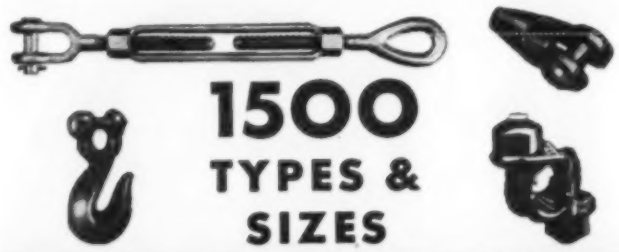
Write for Bulletin 41.

The E. W. BUSCHMAN CO., Inc.
4479 Clifton Avenue
Cincinnati 32, Ohio

Canadian Licensee:
James A. McKechnie, Ltd., Toronto 13, Canada
Representatives in all principal cities.

PRODUCE MORE ... FOR LESS — Buschman Conveyors

If you write maker identify as **IEN - 2080**



1500 TYPES & SIZES

LAUGHLIN

Drop Forged WIRE ROPE & CHAIN FITTINGS

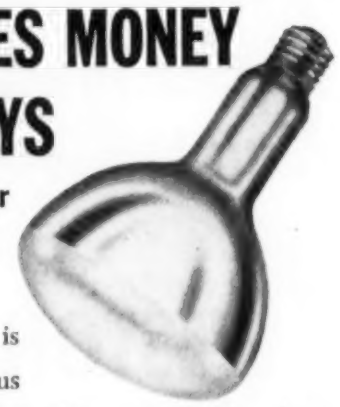
Free Catalog No. 150 Lists Them All

THE THOMAS LAUGHLIN CO.
21 FORE ST., PORTLAND, ME.

FOR SAFETY'S SAKE — SAY LAUGHLIN

If you write maker identify as **IEN - 2081**

NEW...SAVES MONEY IN HIGH BAYS



Amplex R-57 lamp never needs cleaning despite smoke and dust

AMPLEX R-57 LAMP is designed for continuous maximum light output in high bays. Its unique shape and *pure silver*, sealed-in reflector abolish all need for cleaning and for auxiliary reflectors . . . grime and dust never obscure the under surface from which light is projected. Available in 500 and 750 wattages. Save money! Write for full facts. **Amplex Corporation, Dept. X-2, 111 Water St., Brooklyn 1, N. Y.**

AMPLEX

Sealed-Beam Reflector Lamps, Colorbeam Lamps, Spotlites and Floodlites, Industrial Infra-Red Heat Lamps, Vibration and Rough Service Lamps, Street Lighting Lamps, Traffic Signal Lamps, Incandescent Lamps, Fluorescent Tubes, Display Accessories.

If you write maker identify as **IEN - 2082**

ONE MAN AND A Lincoln AUTO-SCRUBBER

CLEANS MORE FLOOR SPACE THAN AN ENTIRE CREW OF SCRUBBERS AND MOPPERS!

Above: floor cleaning at well known manufacturer of office appliances with a Lincoln 500 AUTO SCRUBBER that cleans floors better in one-tenth the time at one-fourth the previous cost. Write DEPT. 2-53 for details.

$AVE UP TO 75% ON FLOOR SCRUBBING!

★ Without cost or any obligation whatever, our local floor maintenance specialist in your territory will survey your present methods and submit specific recommendations to insure substantial savings.

There is a recommended LINCOLN for every floor cleaning operation. Ask for a FREE Demonstration

The LINCOLN FLOOR SCRUBBER AND POLISHER

Lincoln-Schlueter FLOOR MACHINERY COMPANY
1256 WEST VAN BUREN ST., CHICAGO 7, ILLINOIS
MORE THAN 55 YEARS OF SERVICE

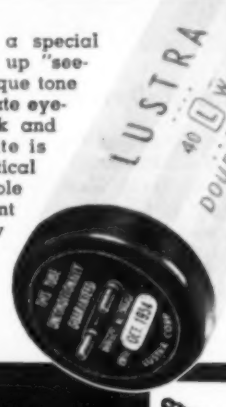
World's Manufacturer of the Most Complete Line of Floor Maintenance Equipment

If you write maker identify as IEN-2083

For maximum "see-ability"... better work...increased production

LUSTRA JADE-LITE

LUSTRA JADE-LITE gives a special quality of light that steps up "see-ability". In addition, its unique tone reduces glare, helps eliminate eye-strain, produce better work and boost production. Jade-Lite is absolutely tops for use in critical work areas. Write for the whole story on Jade-Lite Fluorescent Tubes—it can bring new efficiency and economy. **Lustra Corporation, Dept. P-2, 36 Washington St., Brooklyn 1, N. Y.**

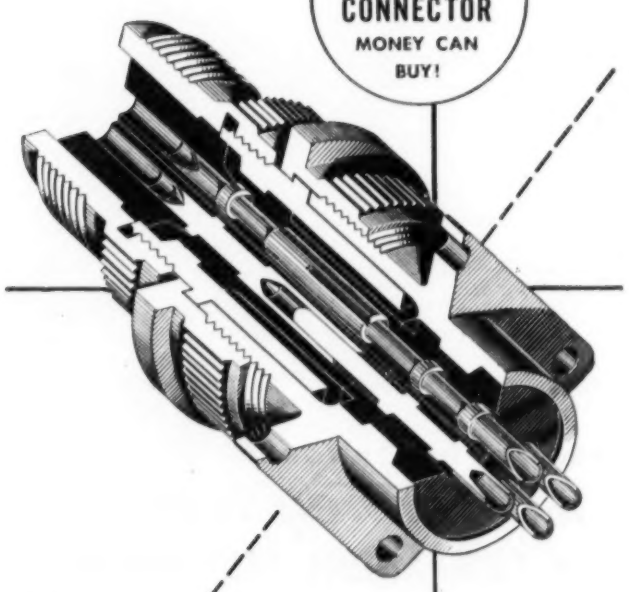


Lustra
AMERICA'S DATED LAMPS

DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOTLITES AND FLOODLITES, RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

If you write maker identify as IEN-2084

The Finest **ELECTRICAL CONNECTOR MONEY CAN BUY!**



SCINFLEX ASSURES YOU PEAK PROTECTION AGAINST CIRCUIT FAILURE

When operating conditions demand an electrical connector that will stand up under the most rugged requirements, always choose Bendix Scinflex Electrical Connectors. The insert material, an exclusive Bendix development, is one of our contributions to the electrical connector industry. The dielectric strength remains well above requirements within the temperature range of −67°F to +275°F. It makes possible a design increasing resistance to flashover and creepage. It withstands maximum conditions of current and voltage without breakdown. But that is only part of the story. It's also the reason why they are vibration-proof and moisture-proof. So, naturally, it pays to specify Bendix Scinflex Connectors and get this extra protection. Our sales department will be glad to furnish complete information on request.

• Moisture-Proof • Radio Quiet • Single Piece Inserts • Vibration-Proof • Light Weight • High Insulation Resistance • High Resistance to Fuels and Oils • Fungus Resistant • Easy Assembly and Disassembly • Fewer Parts than any other Connector • No additional solder required.

BENDIX SCINFLEX
ELECTRICAL CONNECTORS

Bendix

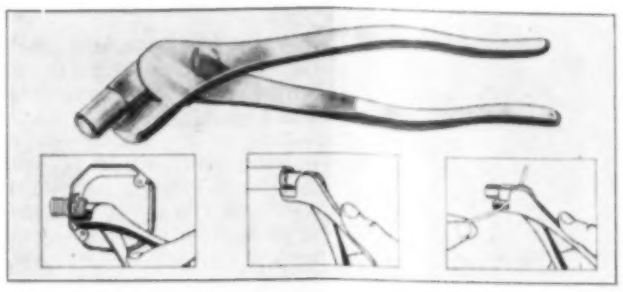
SCINTILLA MAGNETO DIVISION of Bendix AVIATION CORPORATION
SIDNEY, NEW YORK

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.
FACTORY BRANCH OFFICES: 118 E. Providencia Ave., Burbank, Calif. • Stephenson Bldg., 6560 Cass Ave., Detroit 2, Michigan • Brouwer Bldg., 176 W. Wisconsin Avenue, Milwaukee, Wisconsin • 582 Market Street, San Francisco 4, California

If you write maker identify as IEN-2086

PLIER . . Multiple purpose design helps electrician install circuits

Source: UTICA DROP FORGE & TOOL CORP. 2413-17 Whitesboro St., Utica 4, N. Y.



Three uses are shown

Locknuts can be tightened in outlet boxes, burrs removed from steel tube or conduit and insulation removed from wire by means of this new No. 750 angle locknut plier. It measures 8 in. in overall length and mounts a pair of jaws made up of a roller and a cutter. The cutter has two edges.

If you write maker identify as IEN-2087

REFRIGERATING . . Sealed compressor with receiver, 1/3 to 7½ hp. rating.

Source: FRIGIDAIRE DIVISION 302 Taylor St., Dayton 1, Ohio

Shell type receivers

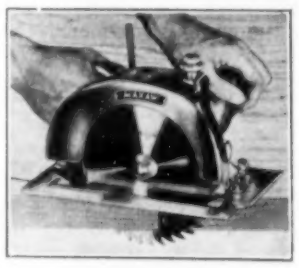
Four types for air cooling, water cooling, combination air and water, and for use with an evaporative condenser are included in the company's new Meter-Miser line of Type XD sealed reciprocating refrigerant compressors. Each assembly employs a direct connected motor enclosed in the same housing as the compressor. Motor windings are cooled by refrigerant gas entering the compressor body.

The motor-compressor unit is mounted on springs in floating design to minimize noise and absorb vibration. A plunger type lubricating pump forces oil under pressure to the bearing surfaces. Bearing design is steel backed by babbitt.

If you write maker identify as IEN-2088

WOODWORKING . . Portable saw, universal motor, takes 8 inch blade

Source: CUMMINS-CHICAGO CORP. 4738-48 N. Ravenswood Ave., Chicago 40, Ill.



About $90

Maxaw-800 is a new size in the company's line of electric portable circular saws, previously described IEN-6204-52. It is characterized by the position of its pivot point which is low and close to the blade center. Depth of cut is 2¾ in. at 45 deg. with a blade actually measuring 8¼ in. in diameter. The saw weighs 14 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

If you write maker identify as IEN-2089

A PAID NEWS ADVERTISEMENT BY CARBORUNDUM CO.

WET SANDING WITH DISCS... now possible with new "Fastcut" Pad 85 Assembly

Wet sanding with discs—a new, labor saving sanding method—has been developed by CARBORUNDUM engineers. It has proven so successful that it is now in use in all assembly plants of a large auto body manufacturer. The key part of the method is the new "Fastcut" Pad 85 Assembly, an 8" natural sponge rubber "Fastcut" pad with a small center hole, to which is cemented a 5" waterproof back-up pad.

"Fastcut" Waterproof Paper Discs by CARBORUNDUM, 8 x 0, are used with the assembly—usually in 280 and 320 grits. The 8" diameter disc has many more cutting points than the quarter size sheets used in hand sanding or the cut sheets used on other type machines. Therefore, a much larger area is sanded in a given time.

Other advantages are: a decided increase in output, with a corresponding decrease in operator fatigue; a better quality sanding job, because finger marks are eliminated; and the fact that unskilled operators can use the "Fastcut" Pad 85 Assembly with a minimum of training.

The method of converting available sanders to the "Fastcut" wet sanding process is a simple one. Call your CARBORUNDUM distributor today for full details. Or write us, at Dept. IEN 82-36, for Engineering Bulletin No. 405.

"Carborundum" and "Fastcut" are trademarks of The Carborundum Company, Niagara Falls, New York

82-36

THE CARBORUNDUM COMPANY
Niagara Falls, New York

If you write maker identify as IEN-2090

Sensational

RESN-X

HEAVY-DUTY FLOORING
IS WORKING WONDERS

where many acids, oils, alkalis, chemical corrosives, solvents, syrups, etc., have caused MAJOR FLOOR BREAKDOWNS.

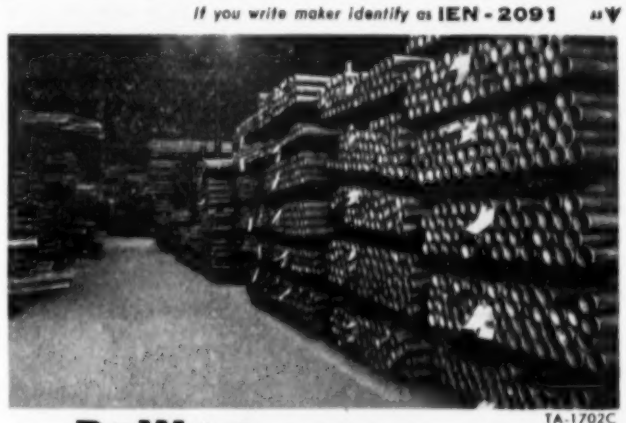
WRITE FOR YOUR FREE COPY!

RESN-X TECHNICAL DATA SHEET

DON'T PUT IT OFF... WRITE AT ONCE!

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 5

If you write maker identify as IEN-2091



TA-1702C

say **B&W** *before you say*

WELDED BOILER TUBES
for Service-Proved Dependability

For three-quarters of a century, B&W has been directly concerned with manufacturing and applying boiler tubes for all pressure requirements.

The application of this extensive knowledge and experience results naturally in the production of superior boiler tubes.

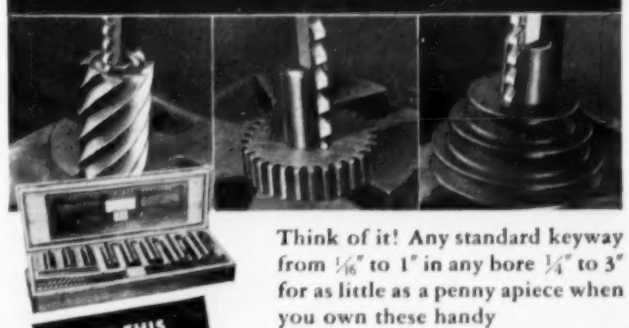
B&W dependability is proved by time and endorsed by hundreds of customers who keep coming back for more ... B&W WELDED BOILER TUBES.

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
General Offices & Plants
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing Alliance, Ohio—Welded Carbon Steel Tubing

B&W STAINLESS and WELDED TUBES

If you write maker identify as IEN-2092

KEYWAYS FOR SALE 1¢ Each



CLIP THIS COUPON FOR FREE CATALOG and PRICE LIST

Think of it! Any standard keyway from 1/16" to 1" in any bore ¼" to 3" for as little as a penny apiece when you own these handy

du MONT *Minute Man*® KEYWAY BROACHES and SETS

The du MONT CORPORATION, Greenfield, Mass.
SEND FREE CATALOG and PRICE LIST N -covering all Minute Man Keyway Broaches and Kits to:

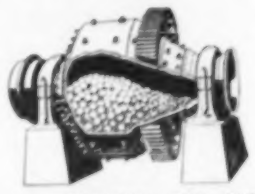
Name .....
Company .....
Address .....

If you write maker identify as IEN - 2093

HARDINGE EQUIPMENT

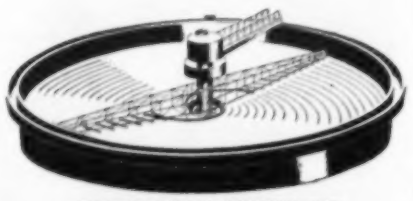
for . . .

Clarifying
Classifying
Drying
Feeding
Filtering
Grinding
Pulverizing
Thickening



CONICAL, ROD AND CYLINDRICAL GRINDING MILLS

RUGGLES-COLES ROTARY DRYERS, KILNS, COOLERS



"AUTO-RAISE" THICKENERS CLARIFIERS, AND HYDRO-CLASSIFIERS

Write for Bulletin 100-38

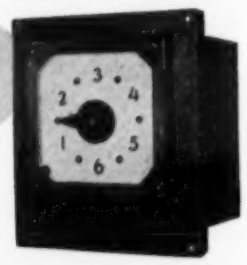
HARDINGE COMPANY, INCORPORATED

YORK, PENNSYLVANIA—240 Arch St. Main Office and Works

NEW YORK 17 • SAN FRANCISCO 11 • CHICAGO 6 • HIBBING, MINN. • TORONTO 1
122 E. 42nd St. 24 California St. 205 W. Wacker Dr. 2016 First Ave. 200 Bay St.

If you write maker identify as IEN - 2094

SWITCH NOW



to Alnor

MOTOR-DRIVEN SWITCH

Wherever you now have a manually operated switch on your instrument board for closing a series of circuits one at a time, an Alnor Motor-Driven Switch provides a simple means of converting to automatic, continuous operation.

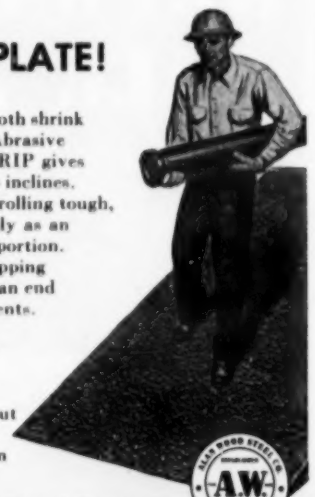
For example, if you have a pyrometer installation reading as many as 20 different temperature points, the Alnor Moto-Switch can be added to your present pyrometer to give continuous readings—on each station once every minute. Dial face can be easily read from 20 feet.

Available in 6, 11, 12 and 20 circuit models. Write today for Bulletin 4703 that gives complete details. Illinois Testing Laboratories, Inc., Room 517, 420 N. LaSalle Street, Chicago 10, Ill.

Alnor — PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 2095

REDUCED INSURANCE PREMIUMS PAY FOR THIS SAFETY FLOOR PLATE!



Accident rates *and* insurance rates both shrink when you install A. W. ALGRIP Abrasive Rolled Steel Floor Plate. For ALGRIP gives non-skid foot safety—even on steep inclines. We make this unique floor plate by rolling tough, abrasive grain densely and uniformly as an integral part of steel plate's upper portion. *Result:* Hundreds of tiny, hard-gripping safety brakes in every footstep put an end to costly, dangerous slipping accidents. And your consequent savings on insurance premiums pay for your ALGRIP installation. Get the full story of savings from safety today. Send for the facts about tough, fire-and-breakage-resistant, non-slip ALGRIP. The handy coupon brings you our new Booklet.

A.W. ALGRIP *Abrasive Rolled Steel Floor Plate*
ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

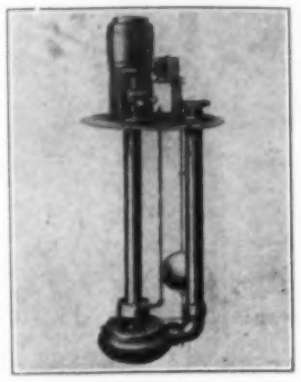
I want to know more about savings from safety. Send me your ALGRIP booklet AL-5.

*Name*_____
*Company*_____
*Address*_____
*City*_____ *Zone*____ *State*____

If you write maker identify as IEN - 2096

PUMP . . Centrifugal sump assembly, 50 to 1,000 gpm. to handle sewage

Source: DEMING CO.
184-88 Broadway, Salem, Ohio



Ask for Bulletin 7600

Series 7600 identifies a new line of vertical sewage pumps with fluid ends ranging from 2 to 4 in. in diameter to handle solids from 1½ to 3 inches. Capacities are from 50 to 1,000 gpm. with delivery head to 60 feet. The pump is available with electric motor or steam turbine drive. Motor rating ranges from ¾ to 20 hp.

The pump shaft is supported vertically in the lower half of the drive coupling located just beneath the motor. It rides in the lower coupling half which is fitted into the bore of an angular contact combination radial and thrust ball bearing. This bearing is grease lubricated and sealed. It is fitted with a grease cup that will purge the old grease when new grease is introduced. The shaft rides also in grease lubricated guide bearings. Snub shock on the impeller is taken by wear rings. The impeller is two-vane non-clog design. It is adjustable vertically with the shaft.

If you write maker identify as IEN - 2097

BUILDING . . Steel sections to form partitions, walls, enclosures

Source: PENN METAL CO.
205 E. 42nd St., Room 1504, New York 17, N. Y.

For erection on the job

Strip steel is rolled and perforated to form a standardized steel section in channel and I-beam shapes in this new Light-Steel line. The web section is perforated to minimize weight. The line includes sections measuring 3¼ to 8 in. in depth. Parts are precut to order in lengths to 28 feet.

Studs and joists are available in single form as channels and in double form, as two channels back to back, to form an I-beam. Supplementary structural track and bridging are sufficiently larger to fit around the standard sections. The individual pieces are shipped with a coat of red zinc chromate paint for protection against corrosion.

Identify as IEN - 2098

New job for a motor vehicle transmission jack has been turned up by Cleveland Pneumatic Tool Company for its Aerol Lift. The jack applies under a table carrying paper stock. It lifts the table and holds it at adjustable elevations to facilitate checking and sorting. The jack rolls under the table. The operator works it to get the desired elevation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2099

Because the end plugs are tapped for universal mounting, any one type or combination of mounting brackets can be used to install an O-M Cylinder . . . *without disassembling or changing the cylinder.* Interlocking mechanism eliminates projecting end caps and tie rods, assuring better alignment and friction-free performance. Thus, O-M Cylinders fit where others won't . . . require ⅓ less space than conventional type cylinders of the same bore . . . are easily removed, inspected, repaired.

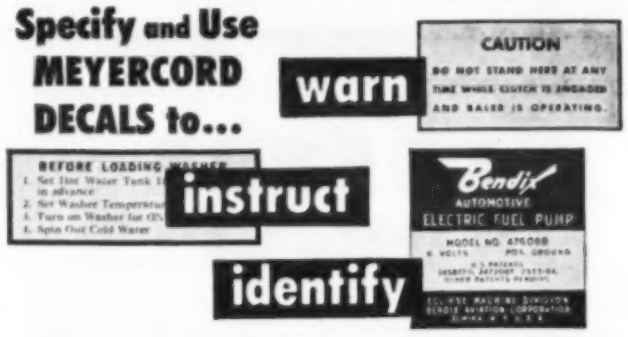
Available in a full range of sizes (*1½" to 8" bores*) with standard, 2 to 1 or oversize rods. All machined steel with bearing bronze, no castings. Completely interchangeable parts. Write today for FREE catalog and complete set of ½ and ¼-scale templates showing all cylinders and mounting brackets.

FREE CATALOG and Templates

ORTMAN-MILLER MACHINE CO.
1208 150th St. Hammond, Indiana

If you write maker identify as IEN - 2100

Specify and Use MEYERCORD DECALS to... warn instruct identify



Low Cost...Durable...All Colors, All Surfaces

Among the many new applications of decals for American industry is the tough Meyercord acid, chemical and weather resistant identification of dangerous chemical containers. If you process and ship dangerous chemicals, be sure to ask for full information.

Meyercord Decals have been adopted by cost-conscious manufacturers in thousands of industries...as nameplates, trademarks, instructions, markers, wiring diagrams, safety warnings and many other important applications.

But "just any decal" won't do the job on "just any surface". For today's rigid requirements, Meyercord Decals are carefully laboratory-engineered to assure complete and perfect adhesion to any commercial surface or finish. Write us for information on our complete technical consultation and designing services.

FREE CATALOG Shows hundreds of uses for durable, washable decal nameplates. Write

THE MEYERCORD CO. *World's Largest Decalcomania Manufacturers*

DEPT. B-315, 5323 WEST LAKE STREET, CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 2101

no room in your budget for

Environmental Testing?

then you haven't seen

the Tenney SERVO UNIT and COMPANION TEST CHAMBER

Accurate environmental testing, for a wide variety of controlled atmospheric tests, is within the reach of *all* industrial budgets. The cost is well under $2,000 for the majority of industrial needs.

The Tenney Servo Unit, a portable air-conditioning system, provides broad variations of heat, cold, and/or humidity for aging and weathering test programs. Air is circulated at the rate of 40 cu. ft. per min., capable of absorbing 1700 B. T. U. per hour at − 100°F., or of delivering 5000 B. T. U. heating effect at a maximum temperature of + 180°F. Relative humidity can be maintained from ambient to 95% in a temperature range of ambient to + 180°F. in 40 cu. ft. of recirculated air. Low temperature operation requires 10 lb. of dry ice per hour at − 180°F., ¾ lb. per hour static.

SPECIFICATIONS

Model	Size	Wgt.	Dry Ice Capacity	Total Temp. Range	Electric Req'mts.
TSU-50	17"x17"x31"	165 lb.	50-70 lb.	−100°F. to + 200°F.	2 kw.
TSU-150	21"x25"x33"	200 lb.	150 lb.	−100°F. to + 200°F.	2 kw.

The Tenney Companion Test Chamber provides an efficient test work-space when attached to the Tenney Servo Unit either horizontally or vertically, by a simple, sturdy device. (Servo is easily detached for use with other enclosures or tests.) Ruggedly constructed and fully insulated, this chamber is built in three sizes of work space, stainless-steel lined: 3 cu. ft. (18" x 18" x 18"), 8 cu. ft. (24" x 24" x 24"), and 27 cu. ft. (36" x 36" x 36"). Forged brass hardware is provided. Complete vapor-proofing is achieved by special gaskets. Optional equipment includes multi-paned viewing window in door, electrical connector panel, turning shafts, coaxial cable, utility ports, and high-voltage terminals.

For further information and prices write:

Tenney ENGINEERING, INCORPORATED
Dept. C, 26 Avenue B, Newark 5, N. J.

Los Angeles Representative: GEORGE THORSON & CO.
Chicago Representative: SPARTAN ENGINEERING CO.

Engineers and Manufacturers of Automatic Environmental Test Equipment

8584

If you write maker identify as IEN-2103

HAND PROTECTION

AO HEAVY DUTY HORSEHIDE

Best for Flexibility, Heat Resistance, Wear

"Shake hands" with AO's "super" line of hand protection for welders. Each glove and mitten is 14" long...has a smooth finish . . . improved heavy weight soft lining on back for greater protection . . . quality edges bound with tape and stitched. These are features which make this chrome-tanned *horsehide* line better than ever. Test them on the job. *See* the difference! *Feel* the difference! Your nearest AO Safety Products Representative can supply you.

Also ask to see and test the other nine gloves and mittens in this top quality AO line.

American Optical — SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches in Principal Cities

If you write maker identify as IEN-2104

Test for Electrical

LEAKAGE • SHORTS • BREAKDOWN

with

"HYPOT" JUNIORS

HIGH POTENTIAL TESTING INSTRUMENTS

WRITE FOR BULLETIN 4A

- **ONLY ONE** instrument necessary to make high potential tests for leakage, breakdown or shorts!
- **PORTABLE,** with rugged steel case...Operates in any position!
- **SAFE** to use, with protected test leads, shielded high voltage, grounded case!
- **SIMPLE**—only three easy steps to make a complete test!
- **VISUAL INDICATIONS** from neon lights give positive test results. Audible test indication for leakage also available.
- **RANGES** 0-1500 to 0-6000 V.A.C. output. Other "Hypots" to 50,000 V.A.C. output at 5 K.W.
- **WRITE** for complete data on "HYPOTS" for your jobs.

ASSOCIATED RESEARCH, Incorporated — Precision Instruments Since 1938

3762 WEST BELMONT AVE., CHICAGO 18, ILLINOIS

If you write maker identify as IEN-2105

ACE-HIDE

UNBREAKABLE RUBBER-PLASTIC 3-GAL. PAIL

3-GAL. PAIL

1-QUART DIPPER

For handling corrosive solutions. Tough, resilient, practically indestructible. Made of a new synthetic rubber-base material called ACE-HIDE, unaffected by most acids and alkalies. Drip-proof spout pours easily directed stream. Graduated scale inside pail. ORDER NOW from your rubber goods distributor, or write us.

ACE rubber and plastic products

AMERICAN HARD RUBBER COMPANY

93 Worth St., New York 13, N. Y.

If you write maker identify as IEN-2106

BALANCING . . Milling machine removes excess from heavy work side

Source: TAYLOR DYNAMOMETER & MACHINE CO. 526-30 W. Highland Ave., Milwaukee 3, Wis.

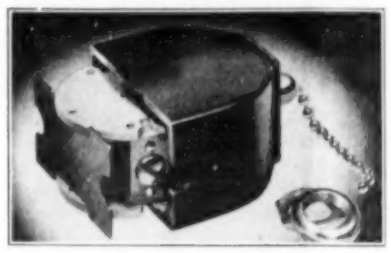
Works with balancer

New milling machine has been developed by the company employing a standard motor driven vertical work head and a sliding work plate on a floor stand to remove excess metal from the heavy side of work pieces that have been checked for balance in its Hi-Eff static machine. The new unit applies in cases where it is not practical to remove excess metal by drilling. The work is fed into the cutter by a hand operated screw.

If you write maker identify as IEN-2107

SWITCH . . Lever operated, chain pull design, 20 amp., 110 volt ac.

Source: McGILL MFG. CO. 100 N. Lafayette St., Valparaiso, Ind.



For ac. and dc.

Model 2020 is a new single-pole multiple-break snap-acting switch in the company's Levolier line. It increases switching capacity of the line to 20 amp. on 110-volt ac. It carries a capacity load at about one-half the temperature rise permitted by Underwriters' Laboratories, Inc. It mounts in a standard outlet box and is available in brass, bronze and nickel finishes. Assembly is in a brown molded plastic housing that can be removed for wiring after loosening one mounting nut. Overall dimensions are 1¼ by 2 inches.

If you write maker identify as IEN-2108

CLEANING . . Motor driven brush removes residue from conveyor belt

Source: OSBORN MFG. CO. 5403 Hamilton Ave., Cleveland 14, Ohio

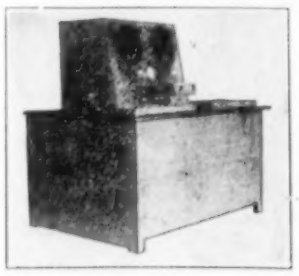
Built to order

New assembly of cylindrical brush, 12 in. in diameter, and a driving motor with a right angle speed reducer, all on a common mounting base, provide a means to remove residue from a conveyor belt as fast as it can gather. The unit is positioned beneath the conveyor at the start of the return run. Guards guide the removed material into channels that prevent it from getting back into the conveyor assembly. The motor driving the brush can be connected into the conveyor drive so the brush will stop when the main motor circuit is open.

If you write maker identify as IEN-2109

TESTING . . Vacuum equipment to inspect metal products for leaks

Source: WHITTINGTON PUMP & ENGINEERING CO. 1124-28 Prospect St., Indianapolis 3, Ind.



No water tank

Illustrated is a representative assembly in the company's new line for application of vacuum to detect leaks in metal parts and products. Equipment includes a vacuum pump, electronic control and one or more test stations with accompanying vacuum gages and indicating lights. Each test station suits given work and usually employs a metal backed rubber faced suction pad on which the work is placed. Additional pads or other means are employed to seal multiple openings.

The company is prepared to supply engineering service in design. The equipment can be supplied for manual, semi-automatic or automatic operation and is now in service in a number of automotive plants.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-2110

MEASURE VISCOSITY IN 20-40 SECONDS

G-E Zahn Viscosimeter for Factory and Laboratory Use

- Easy to Use
- One-piece Construction
- Durable
- Inexpensive—$12.87*

Contact your nearest G-E sales office. General Electric, Schenectady, N. Y.

*Suggested mfg. retail price.

605-13

GENERAL ELECTRIC

If you write maker identify as IEN-2111

Introducing THE NEW GUARDIAN LINE OF **SOLENOID CONTACTORS** MEETING OR EXCEEDING SPECIFICATIONS: MIL-R-6106 • MIL-R-5757 • JAN Tests • AN Tests

FOR THE *first* TIME

a sealed Solenoid Contactor is designed and produced (exclusively by Guardian) to be completely assembled, adjusted and tested before sealing.

- Envelope is not part of structure enabling unit to pass all tests now specified or under consideration.
- Resonance tested to MIL, JAN, and AN requirements on all jet aircraft including those not yet specified. Charts on request.
- Units pass tests up to 120°C.
- Equal or exceed 50 G shock tests.
- Cabled from top for accessibility during assembly.
- The 100—150—200 and 250 amp. units permit torque testing all connections. Excessive torque wrenches will not damage solenoid or seal.
- Special Guardian insulation resists cracks, damage or flaws during ordinary installation.
- Units available grounded from or insulated from ground. Write.

COMPLETELY INTERCHANGEABLE

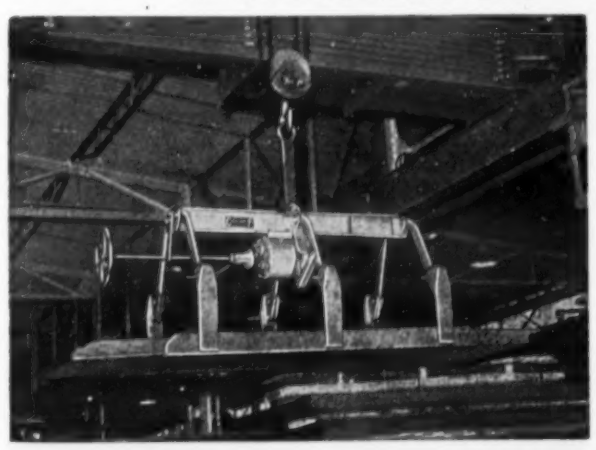
The 50 amp. unit replaces 10 and 25 amp. contactors with normally flexible leads with slight drafting changes. The 100—200 and 250 amp. units are interchangeable both dimension wise and mounting wise. *Interchangeability permits conversion of older aircraft to modern, sealed circuits.*

GUARDIAN ELECTRIC

1620-B W. WALNUT STREET CHICAGO 12, ILLINOIS

A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as IEN-2112



Save Time . . . Save Sheets

Handle loose or bundled sheets with one of these C-F Lifters and you save TIME and Sheets, because C-F Lifters, under one man end control, can handle more sheets per load safer, faster and more economically. Tong action grips load tightly, yet design features like wide bearing surface give full protection to stock edges. End control of C-F Lifters permits closer stacking piles—resulting in more efficient use of storage facilities. C-F Lifters are available in capacities from 2 to 60 tons or larger, in standard or semi-special designs.

WRITE FOR THE BULLETIN "C-F LIFTERS"

CULLEN-FRIESTEDT CO., CHICAGO 23, ILL.

CULLEN-FRIESTEDT CO., 1310 So. Kilbourn Ave., Chicago 23, Illinois

If you write maker identify as IEN - 2113

DAVIS No. 300-S MOTOR OPERATED VALVE

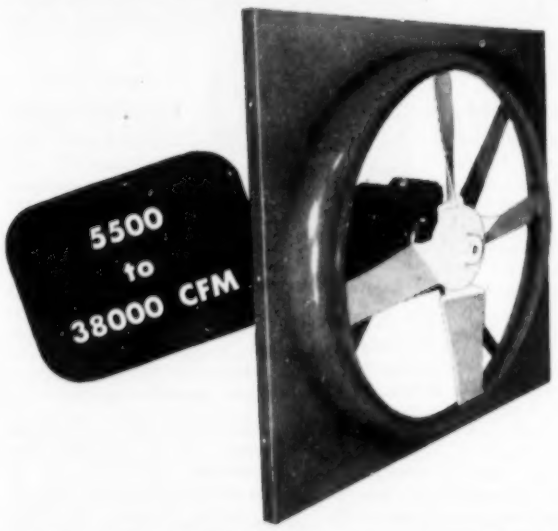
Many industrial plants have found that the Davis No. 300-S Motor Operated Valve solves many flow control problems on process lines, zone heating, and FIRE EMERGENCY SHUT OFF. This valve features: Direct connection between valve stem and 2-position motor . . . 30 second timing . . . 25 watt power consumption; no stand-by consumption . . . Renewable disc . . . No internal packing . . . Visible position indicator . . . and Davis' famous tight-closing, non-sticking, single seat, pilot stem design.

No. 300-S is available in sizes from ½" to 6" for various service requirements. Other designs for higher pressures and larger sizes. *Bulletin on request.*

DAVIS REGULATOR CO.
2529 So. Washtenaw Ave.,
Chicago 8, Illinois

If you write maker identify as IEN - 2114

New Hunter INDUSTRIAL FAN



Powerful, Low-Cost Ventilation

The new direct drive Hunter Industrial Fan is the answer to industrial needs for a low-cost fan that will operate against medium resistance pressures. A few features of this new, popular-priced fan:

- **Square mounting panel,** with convenient flange holes, for easy installation.
- **Streamlined orifice** for more efficient air entrance.
- **"Gull Wing" Design** of airfoil blades for strength and uniform pressure-velocity.
- **High strength blades** of aluminum alloy—non-rusting, non-crystallizing, non-overloading. May be replaced individually.
- **Capacitor-type motor,** totally enclosed. Ball bearings permanently lubricated and sealed. Explosion-proof motors available on order.
- **Direct drive** reduces maintenance costs.
- **Rigid construction** throughout—heavy steel motor support arms welded to mounting panel.
- **Automatic shutters** available to fit all fan sizes.
- **Certified air deliveries** from 5500 to 38000 CFM. Sizes from 24" to 48".

Hunter

CLIP AND MAIL NOW FOR COMPLETE DATA

Hunter Fan & Ventilating Company
375 S. Front St., Memphis 2, Tenn.
Send complete information on Hunter Industrial Fan to:

Name _____

Address _____

If you write maker identify as IEN - 2116

RELAY . . Hermetically sealed for use in communicating equipment

Source: ADVANCE ELECTRIC & RELAY CO.
2433-37 N. Naomi St., Burbank, Calif.

For aircraft use

Single pole, single throw operation rating 9 milliwatts, or double pole, double throw operation at 15 milliwatts of maximum sensitivity, can be specified for this new Series-4000 relay. It is assembled in a rectangular housing with an octal plug or solder terminals. Overall dimensions ar 1½ by 1½ by 2½ in. over the housing.

Coil resistance can be specified to 50,000 ohms. Contacts are either silver or palladium with rating at 1.5 or 3 amp. in the two cases on a resistive load rating 24-volt dc. The unit is rated to 10g vibration at 15 milliwatts. It remains serviceable in an altitude between sea level and 80,000 ft. and in a temperature range from minus 65 to plus 85 deg. Centigrade.

If you write maker identify as IEN - 2117

RECTIFYING . . Selenium equipment, magnetic amplifier controls output

Source: INET, INC.
8653-57 S. Main St., Los Angeles 3, Calif.

Built to order

Output regulation is within 0.15 per cent, at any point to full load, for this new Precision Power Supply when ac. input voltage ranges between plus and minus 10 per cent. The equipment consists of a selenium rectifier with magnetic amplifier control. It is available in a range between 6 and 500-volt dc. with current at 5 to 200 amperes. It has been designed particularly to provide exact dc. **power for** the new electronic computing equipment and other units such as business machines.

If you write maker identify as IEN - 2118

COMMUNICATING . . Master units for two-way talk between 11 stations

Source: MARK SIMPSON MFG. CO.
32-26 49th St., Long Island City 3, N. Y.

Cast aluminum housing

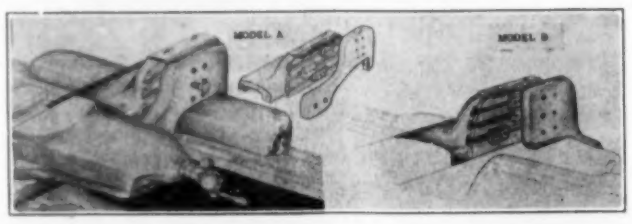
Type IM-10 is a new all-master installation for two-way talk between selected stations and for conference use between any of the 11 stations simultaneously. The equipment operates on 110-volt ac. or dc. Overall dimensions of each master unit are 6⅝ by 7⅛ by 5¼ inches. Each employs a 4-in. Alnico-V magnet and 13-ohm voice coil in its speaker.

Calls can originate at any master and be picked up by any of the others. As many as 5 two-way conversations can be carried on at the same time. Equipment at each master station includes a volume control with an on-off switch, a separate "press to talk" switch and an on-off pilot light to indicate operation.

If you write maker identify as IEN - 2119

LATHE ATTACHMENT . . Feed stop for use in multiple diameter turning

Source: BRACKE-SEIB X-RAY CO.
291-95 Third Ave., New York 10, N. Y.



Assures diameter accuracy

New attachment mounts at the rear of a lathe carriage and on the cross slide to provide a means by which work diameters can be set without the need for measuring. Two models are available as shown in the sketch illustration. Both employ a pin that engages holes in adjustable blocks secured in T-slots on the movable member.

The operator can select desired diameters in correct sequence. The stop is available at present for the 13-in. South Bend lathe and for the 11-in. Logan Model 920.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2120

EDWARD E. ROBINSON

METERING PUMP for HOT WAXES and CEMENTS

- Filling
- Sealing
- Potting
- Insulating
- Cementing
- Impregnating
- Weather Proofing

Robinson Metering Pump being used to forcibly eject metered amounts of cement into wire brush handle. Reservoir temperature 350° F.

Transformers	Sockets
Condensers	Switches
Rectifiers	Wiring Devices

Not a gravity dispenser — Forcibly ejects hot waxes and cements.
Thermostatically controlled heat — Variable with a maximum reservoir temperature of 450° F.
Motor driven, clutch actuated — 2/3 second per ejection.
Variable discharge — Ejections changed in 2 seconds, without tools.
Reduces unit costs—No skilled operator required. Saves material — reduces rejects.
Easily installed — Adaptable to any production set-up.

For complete information on this modern production tool and its possible application to your requirements, write for Bulletin No. IEN-2-53

EDWARD E. ROBINSON INCORPORATED
95 PARK AVENUE · NUTLEY 10, N. J.

If you write maker identify as IEN - 2121

You simply can't beat this new RIDGID Spiral for smooth easy reaming

★ This new improved Spiral reams burr from pipe as fast and cleanly as if it were wax . . . and makes quick work of enlarging conduit box outlets or cutting holes in sheet metal—and does it without chatter.

★ Improved ratchet handle—cutting edges of heat-treated tool steel for long service. You can't beat it for performance. Buy at your Supply House.

Remember also RIDGID LonGrip Reamer with extra-long taper.

THE RIDGE TOOL COMPANY • ELYRIA, OHIO

RIDGID Work-Saver Pipe Tools

If you write maker identify as IEN - 2123

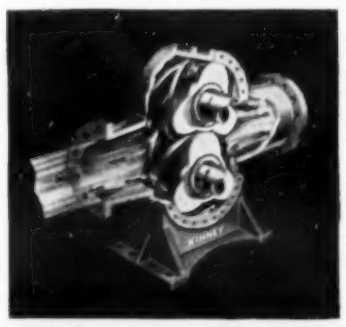
SAFETY SOCKET SCREW COMPANY
6508 Avondale Avenue, Chicago 31, Illinois

If you write maker identify as IEN - 2124

IT'S A RANDOLPH!

From Bracket to Blaze in split seconds! No valves to turn, no nozzles to adjust; just point and press your thumb and Randolph's cloud of snowy CO_2 kills fire instantly. Non-damaging, non-toxic, won't conduct electricity, deteriorate or freeze. A complete line of extinguishers. Underwriters' approved. Write for catalog to RANDOLPH LABORATORIES, INC. 6 E. Kinzie St. Chicago 11, Ill.

If you write maker identify as IEN - 2125



Get the Pump that's Built for Fuel Oil Transfer

Look into a Kinney Model HQA Heliquad Rotary Pump and you'll see why this pump is so widely used for fuel oil transfer. Everything about the HQA is built for dependable and efficient performance: steep helical pumping rotors deliver liquids smoothly and steadily; positive clearances in the pumping chamber eliminate friction and wear. Rugged construction and external anti-friction bearings and timing gears, with separate lubricating system, reduce maintenance and assure long, continuous operation.

Write for Bulletin L51 — or ask to have our engineer call to discuss your pumping problems. Kinney Manufacturing Co., 3564 Washington St., Boston 30, Mass. • New York, Chicago, Detroit, Cleveland, Atlanta, Philadelphia, Pittsburgh, Johnstown (Pa.), Charleston (W. Va.), Los Angeles, Houston, New Orleans, San Francisco, Seattle and foreign countries.

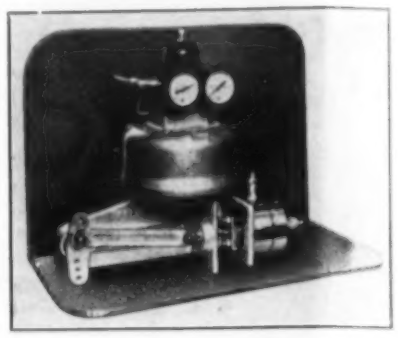
Kinney

SUBSIDIARY OF THE NEW YORK AIR BRAKE CO.

If you write maker identify as IEN - 2126

VALVE . . Pressure operated, 1/8 to 1/2 in., for flow control

Source: ANNIN CO.
3502 Union Pacific Ave., Los Angeles 23, Calif.



Leverage is adjustable

Wee Willie trade names a new piston operated flow control valve for working pressure to 50,000 pounds. Sizes range from 1/8 to 1/2 in. with various types of connection. Flow characteristics are normally linear.

Operation is by the company's Domotor piston assembly combined with a lever mechanism that will develop thrust force on the valve stem to 6,000 pounds. This is sufficient to positively and accurately position the valve plug against the flow pressure. The valve body is made of Type-304, 316 or 347 stainless steel. Nickel, Monel Metal, Hastelloy can be specified. Temperature range is between 430 and 1,200 deg. F.

If you write maker identify as IEN - 2127

RECTIFYING . . Power supply for magnetic chucks, small dc. motors

Source: RAPID ELECTRIC CO.
2879-83 Middletown Road, New York 61, N. Y.

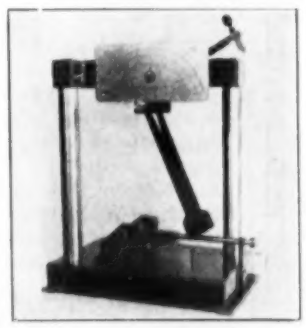
$100 and $135

A selenium rectifier in this new dc. power supply operates on a 110-volt 60-cycle ac. line. It is equipped with a five-position tap switch to provide 90 to 135 volts of filtered dc. output. Two sizes in the line are rated at 300 and 500 watts on continuous duty at full load. A fuse protects the circuit against overload. Weights are 6 and 8 pounds. Dimensions are 5 by 6 by 7 in. and 6 by 7 by 8 inches. Mounting is on a bench or wall.

If you write maker identify as IEN - 2128

TESTING . . Impact equipment for ceramics, light metals, plastics

Source: NATIONAL FORGE & ORDNANCE CO.
49 Front St., Irvine, Warren Co., Pa.



Ask for Brochure 523

Test specimen is secured in a vise on the base of this new equipment for impact by a hammer on a ball bearing spindle near the top of the assembly. Six hammers are supplied, each for testing plastics, ceramics or light metals in one of three ranges. The machine will make either the Izod or the Charpy test. The striking bit is an integral part of each hammer. Accuracy conforms to Federal Specification LP-406a and ASTM Standard D 256.

Three energy scales read to 2, 10 and 30 ft. lb. in 0.01, 0.1 and 0.2 divisions. Overall dimensions are 28 by 16 by 36 inches. Weight of the new equipment is 500 pounds.

If you write maker identify as IEN - 2129

TRUCK . . Hand platform design with trailer couplings, rates 2 ton

Source: MERCURY MFG. CO.
4132 S. Halsted St., Chicago 9, Ill.

Couplings are standard

Model A-310-326-M is a new steel combination hand truck trailer particularly suited to handle palletized loads to 2 ton. Construction includes caster type steering wheels at one end and rigidly mounted load wheels at the opposite end. These latter wheels are equipped with brake shoes operated by a lever and wire pull rope. The brakes assist in operating the truck on a grade either in a train or when it is employed as a single manual unit. The wheels are mounted on Hyatt roller bearings and are fitted with molded-on solid rubber tires. Overall dimensions are 62 by 36 inches. Platform height above the floor is 13 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

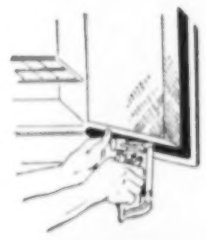
If you write maker identify as IEN - 2130

FASTER! with HANSEN

Hansen speeds attaching wires in radios, TV, screens, aerials, etc.

1 0 0 1 Uses

— the TACKER that SAVES TIME . . STEPS . . MATERIALS



Lip tackers available for tacking gaskets, channels and other raised surfaces.

SAVES TIME in all types of tacking and fastening. Fast, easy one-hand operation. Tacker operates fast as you can grip.

SAVES STEPS. Self-contained. Ready for instant, continual use. Vest-Kit for quick refills. No back-tracking.

SAVES MATERIALS. Balanced design insures accurate, precision driving. Economical, efficient use of materials.

36 MODELS
80 STAPLE SIZES

REQUEST BOOKLET

A.L.HANSEN MFG. CO.
5051 RAVENSWOOD AVE. CHICAGO 40 ILLINOIS

If you write maker identify as IEN - 2131

You'll be amazed at the *new cost-cutting efficiency* that a De Walt brings to your boxing and crating operations!

It cross-cuts and rips with amazing speed and accuracy —enables you to turn out large quantities of precision-made boxes and crates in record-breaking time!

And there's less waste material when you use a De Walt—another factor that helps to cut costs.

Investigate this source of potential higher profits today! Send for catalog to De Walt Inc., Dept. IEN-2, Lancaster, Pa.

De Walt Inc. Lancaster, Pa.

DE WALT
POWER SAWS

Subsidiary of AMERICAN MACHINE AND FOUNDRY COMPANY, New York

If you write maker identify as IEN - 2132

ANNOUNCING A NEW Gerrard Tying Machine . . .

The Gerrard B.S.M. Twine Sealer is completely automatic, makes a 1-cycle wrap, and secures the twine with a metal seal so firmly that the twine will break before the seal will slip. Bundles are limited to a 14" width and a 9" height.

FULLY AUTOMATIC B.S.M. TWINE SEALING MACHINE

● Here's a new, completely automatic tying machine that may fill a need in your plant . . . the Gerrard B.S.M. Twine Sealing Machine. Just place the bundle in the tying area, step on the pedal, and in three seconds, the twine is wrapped around the bundle, drawn to a preset tension, securely fastened with a *metal seal*, and cut. The bundle is firmly gripped and the tie will remain neat, strong and tight until the twine is cut. Several ties can be put around a bundle as quickly as it can be moved into position.

Look around your mailing or shipping department. There may be several spots where a Gerrard B.S.M. Twine Sealing Machine can save you time and money, and do a better tying job at the same time.

Send for folder describing the Gerrard Twine Sealing Machine. It's Free.
Also phone, write or wire for further information about the Gerrard Method of Twine Sealing or of Steel Strapping. A Gerrard engineer will gladly call, without obligation, to discuss your packaging and bundling requirements.

Gerrard Steel Strapping Division, United States Steel Corporation
4701 South Richmond St., Chicago 32, Ill.

USS **GERRARD STEEL STRAPPING**
UNITED STATES STEEL

If you write maker identify as IEN - 2133

NOT TOO LITTLE... NOT TOO MUCH...BUT JUST ENOUGH COOLANT

FULFLO

CENTRIFUGAL COOLANT PUMPS

COOL TOOLS

do a better job . . . last longer . . . keep costs down while production goes up. Simplicity of construction and design . . . precision operation . . . everything goes right with FULFLO PUMPS.

MODEL FVM vertical
MODEL FHM horizontal

Flanged mounts; ¼ hp.; 30 gal. per min. mechanical seal.

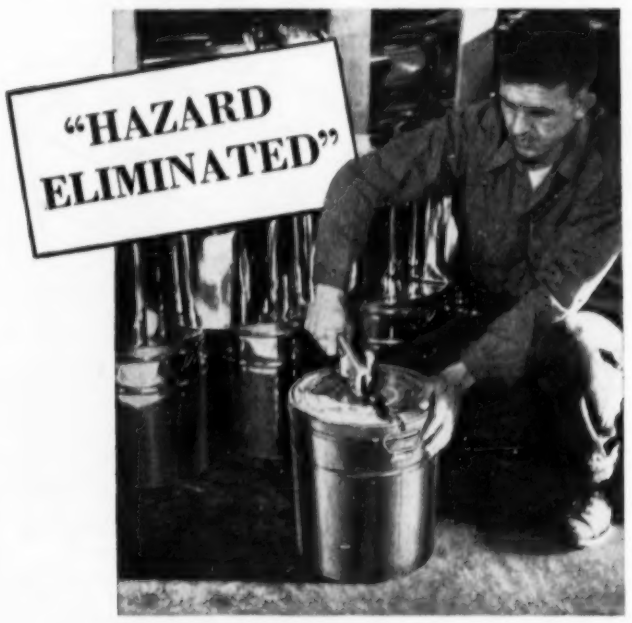
FULFLO PUMPS

Write on your letterhead for professional edition of FULFLO MECHANICAL DATA BOOK

Ask the FULFLO engineers to help you on your coolant problems.

FULFLO THE FULFLO SPECIALTIES CO. Inc.
BLANCHESTER, OHIO

If you write maker identify as IEN - 2134



Another example of

positive protection in transit

with the

Stanley Steel Strapping System

Product lost — everything ruined was the report when the tops of pails containing an "antiquing" liquid came off during shipment from Endicott-Johnson's Chemical Dept. in Endicott, N. Y.

Simple, foolproof solution was found by banding the tops to the pails with Stanley Steel Strapping.

You'll find many ways in which the Stanley Steel Strapping System can protect shipments, speed shipments and lower costs. For example, it is a fast, economical way to prepare floating loads. It saves man hours and materials in packaging or making up unit loads... facilitates loading and unloading . . . prevents pilferage.

Let this expert help you. The Stanley Man is a specialist in Steel Strapping and Car Banding Systems. He'll be glad to study your materials handling methods, to suggest improvements without obligation. Just mail the coupon below. Branch Offices or Representatives in 32 principal cities.

STEEL STRAPPING AND CAR BANDING SYSTEMS

STANLEY
Reg. U.S. Pat. Off.

Hardware • Tools
Electric Tools
Steel Strapping
Steel

Invite the Stanley Man to Call

The Stanley Works, Steel Strapping Division
204 Lake Street, New Britain, Conn.

Please have your Representative show me how the Stanley Steel Strapping System can speed materials handling and lower costs

Name _____
Firm Name _____
Street _____
City and State _____

If you write maker identify as IEN - 2136

CRANE . . Electric traveling design, monorail construction, rates 10 ton

Source: AMERICAN MONORAIL CO.
13111 Athens Ave., Cleveland 7, Ohio

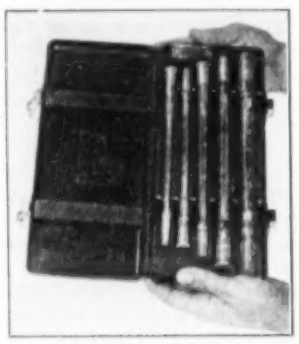
Push button control

The bridge and carriage of this new specification crane are based upon assemblies of the company's standard monorail equipment with pneumatic tire drive for both movements. The bridge is reinforced with cross-bracing and joined into a single rigid unit. The crane truck trolleys are self-aligning design. All of the movements are power operated including an interlock to transfer the carriage on a double spur track over a recessed receiving dock. The company is prepared to supply similar equipment for specified load capacity and span.

If you write maker identify as IEN - 2137

METER . . Flow test kit with five flowmeter tubes and floats

Source: FISCHER & PORTER CO.
745 Jacksonville Road, Hatboro, Pa.



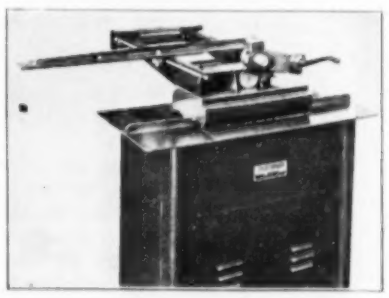
Includes instruction book

Capacity ranges from 0.75 to 805 cc. per min. for this new test kit of flowmeter tubes. Each tube is the company's Tri-Flat design with standard taper round glass joints, female at the outlet and male at the inlet so that all glass or rubber hose connections can be made. The tube carries three flats that project upward in the taper section from the reference point to a point above the usable scale portion. The carrying case is made of Royalite plastic. List price is $95.

If you write maker identify as IEN - 2138

SHEARING . . Slitting attachment for Lockformer sheet metal machines

Source: LOCKFORMER CO.
4613-17 W. Roosevelt Road, Chicago 50, Ill.



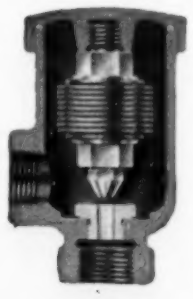
Ask for Bulletin C1

Sheet metal, measuring 20 gage or lighter, can be sheared in desired width from ⅛ to 24 in. by this new hand operated circular cutter attachment. It applies on the company's Models-20, 22 and 24 Lockformer sheet metal machines. The assembly includes an adjustable back gage that holds the work in line. The attachment can be installed in about 10 minutes. Resharpening is confined to the two small cutting rolls.

If you write maker identify as IEN - 2139

TRAP . . Thermostatic design, metal bellows, ¼ to ¾ inch sizes

Source: W. H. NICHOLSON & CO.
10-14 Oregon St., Wilkes-Barre, Pa.



Patented

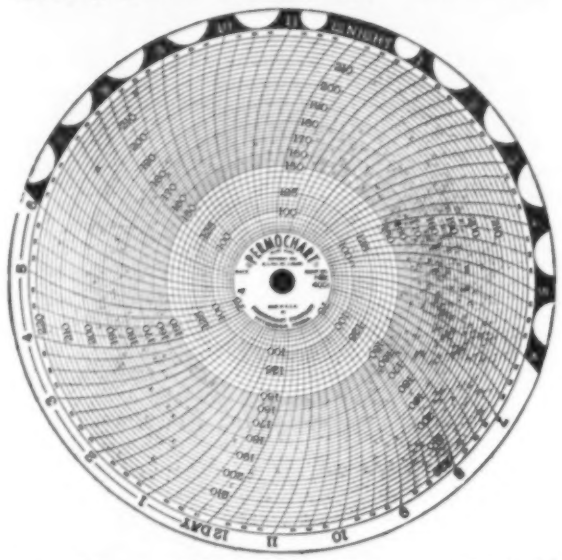
Small pieces of steam-using equipment such as refinery tracer lines, unit heaters, ironers, sterilizers, urns, kettles, steam tables, are representative points for application of the company's new Type D thermostatic steam trap. It is available in four pipe sizes from ¼ to ¾ in. and is suited for operation with lines carrying vacuum to 200-lb. pressure.

The assembly includes a cast bronze body, forged brass cap and a copper covered asbestos gasket. The bellows is made of bronze, hydraulically formed and equipped with end fittings to permit the use of an open end wrench. The bellows is filled with distilled water. The valve and seat are made of hardened stainless steel with a ground fit. List prices range from $14 to $16.25 over the range of sizes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2140

LONG-LIFE PLASTIC CHARTS



Reusable — PERMOCHART — Washable*

You can use WASHABLE laminated plastic "PERMOCHARTS"* on all your circular recording and controlling instruments. Convenient to use, they'll save you time and expense.

• Guaranteed serviceable life—TWO YEARS. • Cost per day only $ .00205 to $ .00342. • Available for any instrument using circular charts. Made of 100% "Vinylite" plastic laminated construction.

Send for sample of PERMOCHART Construction

*Reg.

ALLEGHENY PLASTICS, INC.
390 CHESTNUT ROAD SEWICKLEY, PA.

If you write maker identify as IEN - 2141

NEW SBS WASHSTATION* "brings the washroom to the worker"* for only $52.50 per unit

(F.O.B. Saginaw, Mich. Towel dispensers not included)

SBS-30 Waterless Skin Cleanser and new type dispenser make possible portable wash-up units that save hundreds of man-hours . . . thousands of dollars!

The SBS Waterless Washstation is a complete, self-contained hand-washing unit that requires no plumbing because it uses SBS-30, a remarkable waterless skin cleanser that safely removes practically all kinds of soils . . . even those that harmful solvents will not wash off.

saves hundreds of dollars yearly — SBS Waterless Washstations, by being located close to work areas, can increase production because they reduce the time workers must spend washing up. (Time studies show that by reducing off-the-job time, a single SBS Waterless Washstation can save you as much as $720.00 per year.)

increases worker efficiency — In addition to saving workers' time, SBS Waterless Washstations help keep workers' hands cleaner for better health and greater efficiency in industry.

eliminates crowding and congestion in washrooms — SBS Waterless Washstations help reduce congestion in washrooms at lunch time and new-shift time because employees can wash up right at the job.

located anywhere — SBS Waterless Washstations are compact, space-saving and portable. They can be stationed close to work areas in large factories, warehouses and shops to encourage cleanliness and cut down on time consumed going to distant washrooms. Set up near outdoor operations, they provide washing facilities when no water is available.

removes nearly every soil except lacquer — SBS-30 Waterless Skin Cleanser will remove tar, paint, varnish, heavy industrial grease and grime and other hard-to-remove soils that ordinary soap and water will not wash off. It will also take off ink, mimeograph and hectograph stains, glue and other office soils. And it eliminates the use of harsh and dangerous soaps and solvents that irritate workers' hands.

easy to use — SBS-30 is easier to use than soap and water and it removes soils faster—workers just rub it on their hands, then wipe it off along with all dirt and grime. It leaves the hands clean, smooth and soothed, protected from soreness and chapping.

The SBS Waterless Washstation is constructed of heavy steel finished in grey-green enamel. There is a removable cloth bag in base for used paper towels . . . and a handy locking storage space on top. Turret top holds SBS-30 dispenser and two paper towel containers of the type you are now using.

The polished aluminum dispenser is troublefree and lubricated by the cleanser itself. One turn of the handle dispenses just the right amount—no leakage, no soap waste. Dispenser has two-way feed adjustment . . . provides from 1000 to 1500 washes before refilling. Costs no more per hand-wash than other types of cleansers.

Fill out and mail the coupon below to get all the facts and details about the amazing new SBS Waterless Washstation. This information will tell you all about our no-risk 30 day money back trial offer that enables you to prove to yourself with your own tests on your own home grounds exactly how much you can save. Fill out the coupon now—before you turn the page—it means money to you.

*Trademark 85

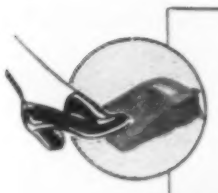
SUGAR BEET PRODUCTS CO., Dept. 1E, SAGINAW, MICHIGAN

Sirs: Please send me full information about the new SBS Waterless Washstation and your 30 day no-risk money back trial offer.

NAME _____
TITLE _____
COMPANY _____
STREET ADDRESS _____
CITY _____ ZONE _____ STATE _____

SUGAR BEET PRODUCTS CO. • Saginaw, Mich.
Chemical By-Products Division

If you write maker identify as IEN-2143



TIP-TOE CONTROL

ASSURES

TIP-TOP PRODUCTION

. . . especially from women workers!

5½"x3¼"x1¼" Weighs only 1 lb.

Tip-toe control operates Linemaster, Junior's lightweight switch by momentary contact of toe—while heel rests comfortably on floor! Allows full use of both hands, increases production, prevents accidents, makes work easier. Neat-looking, streamlined, aluminum housing with black crackle enamel finish.

LINEMASTER, JR.
FOOT SWITCH

Let us quote on your special switch requirements

LINEMASTER SWITCH CORP.
124 Putnam Rd. Woodstock, Conn.

WRITE FOR BULLETIN

"LINEMASTER," the Leader!

If you write maker identify as IEN-2144

Immediate Delivery

Buy Direct from the Manufacturer and Save

Francis EST. 1880. **FACTORY-MILL & WAREHOUSE TRUCKS**

Cutting Handling Costs since 1880

WRITE *TODAY for catalog and prices*

3000-lb capacity

Complete Line —

For every use. Standard sizes 27" x 48" and 30" x 54" in stock ready for immediate shipment.

Need more good trucks quick? Buy direct from the manufacturer and save —time AND money. Francis heavy duty, economical trucks feature strong iron work —hardwood frame—rigid construction. All carefully machine fitted. Steel rims or rubber tires.

Manufactured by
HOOSIER FENCE CO. Inc.
Dept. IEN 1701 E. 38th St., Indianapolis, Ind.

If you write maker identify as IEN-2145

THE EASY WAY TO TELL!

Changeable Letter Bulletin Board
The message you want—when you want it!

DAV-SON INDUSTRIAL BULLETIN BOARDS

Employee bulletins, safety messages, production records all get maximum attention when you use DAV-SON Bulletin Boards. There is a DAV-SON Bulletin Board for every purpose.

- Changeable Letter Boards
- Cork Back Pin-Up Boards
- Indoor and Outdoor Types
- Metal or Hardwood Frames
- With or Without Locking Glass Doors
- Illuminated and Non-Illuminated
- Special Safety Displays
- Single and Multiple Panels

Cork Back Boards. For letters, photos, posters, etc.

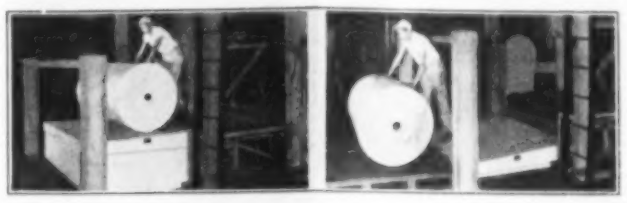
Write for complete information regarding your requirements.

DAV-SON **A.C. DAVENPORT & SON..INC.**
ESTABLISHED 1932
311 N. DESPLAINES ST., CHICAGO 6, ILL.
MANUFACTURERS OF BULLETIN BOARDS FOR EVERY USE

If you write maker identify as IEN-2146

ELEVATOR . . Motor driven platform assists in handling rolls of paper

Source: HAMILTON TOOL CO.
905 Hanover St., Hamilton, Ohio



Available for specified use

New design of the company's Portelvator mounts a platform measuring 72 by 60 inches. It employs a 1-hp. motor with a limiting switch and a reversing magnetic starter to move the platform between 5½ and 26 in. above floor level. Load capacity is 3 ton. The elevator receives rolls of paper at the top position. It lowers the rolls to a lower level.

The cam-operated top tilts upward through a 3-in. movement so the paper will roll off to the floor to be picked up by a lift truck. Construction is similar to the elevator previously described IEN-2407-49 in which the motor drives four geared heads that operate vertical elevating screws.

If you write maker identify as IEN-2147

REFRIGERATING . . Condenser, shell and coil design, 1½ to 5 ton

Source: STANDARD REFRIGERATION CO.
3533-37 Fillmore St., Chicago 24, Ill.

Ready to connect

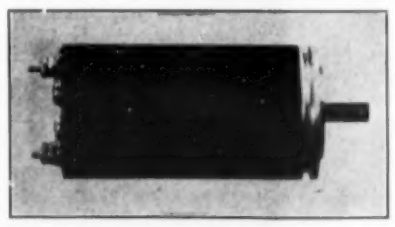
Illustrated is a representative unit in the company's new line of Cross-Flow shell and coil condensers. It has been developed particularly for cabinet air conditioners and for refrigeration installations where space is limited. The 3-ton assembly measures 8⅝ in. in diameter by 16 in. in height. Operation is with city water or water circulation through a cooling tower. The assembly is tested to 300 lb. pressure and can be supplied with the ASME stamp and certificate.

Special designs can be built to requirements.

If you write maker identify as IEN-2148

GENERATOR . . Miniature dc. permanent magnet unit for servo duty

Source: GLOBE INDUSTRIES INC.
123-27 Sunrise Place, Dayton 7, Ohio



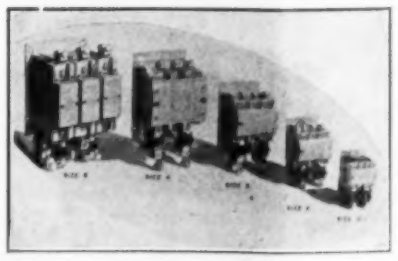
Available to order

New generator is similar to the company's previously developed Moto-Mite permanent magnet motor. It is intended as a rate device in servo installations requiring a small light weight unit with sufficiently high output for good sensitivity. A specific unit can provide 0.7 volt per 100 rpm. with a starting torque of 0.15 oz. in. or 1.7 volts per 100 rpm. with a starting torque of 0.5 oz. inch. Loading is maximum at about 50 milliamperes. The assembly can include a plain shaft extension or a pinion. Terminals and leads are supplied as specified for given requirements.

If you write maker identify as IEN-2149

MOTOR CONTROL . . Motor starter for use with explosion proof condulet

Source: ARROW-HART & HEGEMAN ELECTRIC CO.
101-5 Hawthorn St., Hartford 6, Conn.



Ready to install

Sizes range from No. 0 to No. 5 in the company's new addition to its Type RA line of magnetic contactor motor controls. The new units feature vertical overloads below the contactor. The design is intended for use with the new Crouse Hinds M52 Type EBC explosion proof condulet.

Small size and light weight characterize each assembly. A Size-2 unit assembles with 7-in. condulet. A Size-3 requires a 9-in. unit. Size 0 and 1 assemblies apply in a 7-in. condulet, the smallest size available. Size 2 can be placed in this same condulet in cases where additional starting capacity is required beyond the rating of the No. 0 to No. 1.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-2150

Save time...

ENGRAVE your own NAMEPLATES

DIALS • PANELS

The fastest, easiest method for engraving individual nameplates, dials and panels.

- Automatic depth regulator.
- Engraves 15 sizes from One master alphabet.
- Equipped with self-centering device.

Send for Catalog IM 23

NEW HERMES, Inc. 13-19 University Place, N.Y. 3
In Canada: 359 St. James St., Montreal
World's Largest Manufacturer of Portable Engraving Machines

If you write maker identify as IEN-2151

production flows smoothly...

at top speed, at all times, yet free of rejects

Kester makes 62 different fluxes to meet any requirements. Why not write our Technical Department for full information?

KESTER SOLDERING FLUX

KESTER SOLDER COMPANY
4211 Wrightwood Ave., Chicago 39
Newark 5, N. J. • Brantford, Canada

KESTER SOLDER

If you write maker identify as IEN-2152

SPEEDEX AUTOMATIC WIRE STRIPPER!

NEW!

NET PRICE **$4.95** ($8.25 List)

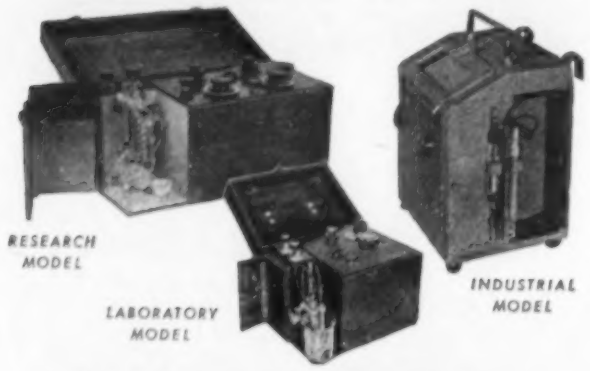
STRIPS BOTH STRANDED AND SOLID WIRE

- ★ Fully Automatic
- ★ Single Squeeze
- ★ Delayed Action
- ★ Safe - Will Not Crush Fine Stranded Wires

SEE YOUR DISTRIBUTOR OR WRITE FOR LITERATURE AND INFORMATION

WOOD SPECIALTY *Manufacturing Co.*
909 Taylor Avenue, Rockford, Illinois

If you write maker identify as IEN - 2153



Cambridge pH Meters

The three portable models illustrated above incorporate new and important advantages. A.C. line operation eliminates battery nuisance. Laboratory and Research models use electron-ray tube for precise null-point indication. Industrial model is direct-reading, continuous-indicating; ruggedly built for plant use.

Accuracy: Research .02 pH, Laboratory .05 pH, Industrial .10 pH. Cambridge pH equipment also includes single- and multi-point indicators and recorders. Send for Bulletin 910-MR.

CAMBRIDGE INSTRUMENT COMPANY, INC.
3710 GRAND CENTRAL TERMINAL, NEW YORK 17, N. Y.

Pioneer Manufacturers of

PRECISION INSTRUMENTS

If you write maker identify as IEN - 2154

A CLIPPER MASONRY SAW WILL PAY FOR ITSELF FROM YOUR SAVINGS IN TIME AND MATERIAL!

Every shape and size refractory **cut in seconds!** Perfect fitting reline jobs that last longer — cost less. And Clipper's Patented features give you DUSTLESS cutting, instant Portability and complete flexibility.

It's YOURS on...

FREE TRIAL . . .

Discover how CLIPPER will increase profits by increasing production at reduced costs. "On the Job" FREE TRIAL guarantees satisfaction at no obligation.

DEPEND on CLIPPER SUPERIOR BLADES

...all specifications of Abrasive, Diamond & "CBR" (Break-Resistant) Blades guaranteed to, "Consistently Provide the fastest cut...at the lowest cost...with the greatest ease!"

SAME DAY SERVICE FROM YOUR NEAREST FACTORY BRANCH —SEE BELOW

"4 OUT of 5" Concrete Saw Users Choose CLIPPER "CONSAWS"

For Sawing Repair Patches and Trenches in Floors, Runways and Streets

5 MODELS GAS or ELECTRIC POWERED

Clipper MANUFACTURING CO.

NATION-WIDE DIRECT FACTORY SERVICE

- CINCINNATI
- BOSTON
- WASHINGTON, D.C.
- CHARLOTTE, N.C.
- PHILADELPHIA
- CLEVELAND
- ST. LOUIS
- CHICAGO
- HOUSTON
- AUSTIN, TEXAS
- SAN FRANCISCO
- ATLANTA
- DETROIT
- PITTSBURGH
- NEW YORK
- BIRMINGHAM, ALA.
- LOS ANGELES
- INDIANAPOLIS
- ST. PAUL
- MILWAUKEE
- DALLAS

IN CANADA — P.O. BOX 476, WINDSOR, ONTARIO

TEAR OUT AND MAIL !

CLIPPER MANUFACTURING CO.
11 E. 28th St., KANSAS CITY 8, MO.
Send FREE Literature and Prices on:

- ☐ CLIPPER MASONRY SAWS
  - ○ DUSTLESS MODELS
  - ○ DRY ONLY MODELS
- ☐ CLIPPER CONSAWS
- ☐ CLIPPER ABRASIVE BLADES ☐ WET ☐ DRY
- ☐ CLIPPER DIAMOND BLADES

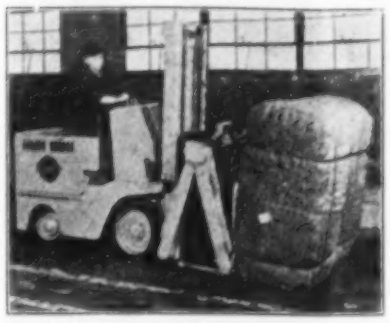
No. 99 IND.

COMPANY _____
ADDRESS _____
CITY _____ STATE _____

If you write maker identify as IEN - 2156

TRUCK . . Load pusher attachment mounts on 1 to 3 ton fork lift truck

Source: BAKER-RAULANG CO.
1248-52 W. 80th St., Cleveland 2, Ohio



Load is pushed forward

Two sets of pivoted arms assemble behind a vertical plate to make up a new attachment available for the company's 1 to 3-ton fork lift trucks. Mounted vertically between the arms is a double acting hydraulic cylinder. It is controlled by the operator from his position on the truck.

The attachment can be employed to push a load from the truck forks into a truck and to follow it with additional loads until the truck has been completely filled without taking the fork truck from the loading platform. The new equipment takes about 10 per cent of the load capacity of the truck. Speed of the load-moving action can be controlled by the operator.

If you write maker identify as IEN - 2157

TESTING . . Loading resistor for use on diesel electric locomotives

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

Applies load on generator

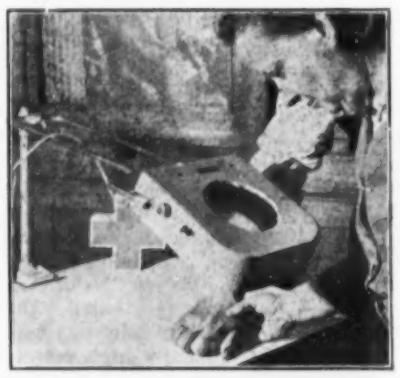
Type TT-148 is a new self-contained loading resistor, rated to 2,500 hp., for performance testing on diesel electric locomotives. The assembly consists of 12 resistor trays, a motor driven blower, knife switches and measuring instruments. Overall dimensions are about 42 by 47 by 105 inches. Weight is 3,500 pounds.

The resistor sections are connected through the knife switches and bus bars for 10 series parallel combinations of load. The resistor elements are assembled to provide for surface cooling. Slip joint supports permit expansion under load. The blower motor is mounted vertically at the base of the housing and is part of the resistor circuit so no external power source is required.

If you write maker identify as IEN - 2158

MAGNIFYING . . Illuminated fixture, 5 in. lens, Circline fluorescent lamp

Source: LARRIMORE SALES CO.
P. O. Box 1234-A, St. Louis 1, Mo.



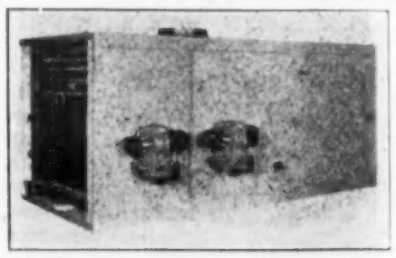
Clamps on table

Circline lamp surrounds the 5-in. double convex magnifying lens in this new Model-203 illuminated magnifier. The circular lamp takes the place of four small fluorescent units in the design previously described IEN-2105-52. Intended application is primarily in first aid departments for which the unit is finished in white enamel. It is available also in maroon finish with a heavy duty bracket for industrial inspection operations.

If you write maker identify as IEN - 2159

HEATING . . Oil fired space unit, self-contained design, 100,000 btu.

Source: JACKSON & CHURCH CO.
319-23 N. Hamilton St., Saginaw, Mich.



One of several sizes

Centrifugal blower driven by a 5-hp. motor passes air to be heated around flue passages measuring 50 in. in length by 40 in. in width and from 1½ to 2¾ in. in depth in this new oil fired unit heater. Air is deflected over 238 sq. ft. of heating surface that make up the combustion chamber. Assembly is in a rectangular housing measuring about 9½ ft. in length by 55 in. in width by 52 in. in height. Installation is in suspension from a ceiling.

The unit is fired by two oil burners each delivering into a separate stainless steel combustion chamber at the rate of 4½ gph. One burner can be operated during mild weather. Both are electronically controlled for flame failure shutdown.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2160

MULTIPLE BENDING SAVES DOLLARS

Here is a Pedrick Production Bender producing five identical frames simultaneously. These savings can be yours too with a Pedrick bender. Multiple bending is adaptable to almost all bending operations, including pipe, tube, reinforcing bars or structural shapes.

Smaller and larger machines available.

Write for descriptive folder

PEDRICK TOOL & MACHINE CO.
3640 N. Lawrence St., Dept. 7, Phila. 40, Pa., U.S.A.

If you write maker identify as IEN - 2161

PRODUCTION UP COSTS DOWN WITH Commander PRODUCTION TOOLS

Adjustable MULTI-DRILL

- Adjustable To Any Hole Pattern
- Drill 2 to 8 Holes at 1 Stroke
- Fits Any Drill Press

Increase production up to 800%—save time, cut costs. Mounted without alterations or special tools. 9" drilling area; centers to ½". Extension Spindles available to increase area to 22½". Special adaptations available.

"the tapper that thinks for its operator"

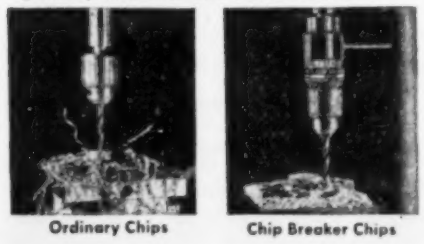
Commander TAPPER

- Wider Range . . . 1 Tapper Handles #0 to ¾" Taps
- Automatic Tap Protection
- Furnished to Fit Any Drill Press

Adjustable full range torque control instantly stops any tap when it's dull, loaded, strikes a hard spot, or bottoms in blind hole tapping. Assures maximum production, cuts rejects, even with inexperienced operators.

DRILL CHIP BREAKER

- Drill SHALLOW or DEEP Holes up to 400% Faster
- Drill 10 diameters or more in depth without clearing drill
- Better, Smoother, More Accurate Holes



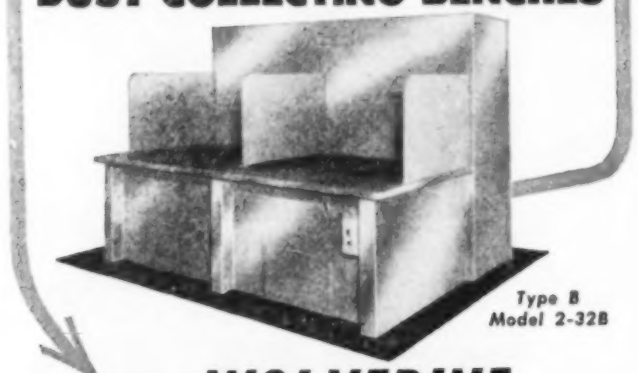
Ordinary Chips — Chip Breaker Chips

Write FOR CATALOG #851 and the name of your nearby Commander Distributor

Commander MFG. CO.
4219 W. KINZIE STREET
CHICAGO 24, ILLINOIS

If you write maker identify as IEN - 2163

New DOWN DRAFT DUST COLLECTING BENCHES



Type B
Model 2-32B

by WOLVERINE

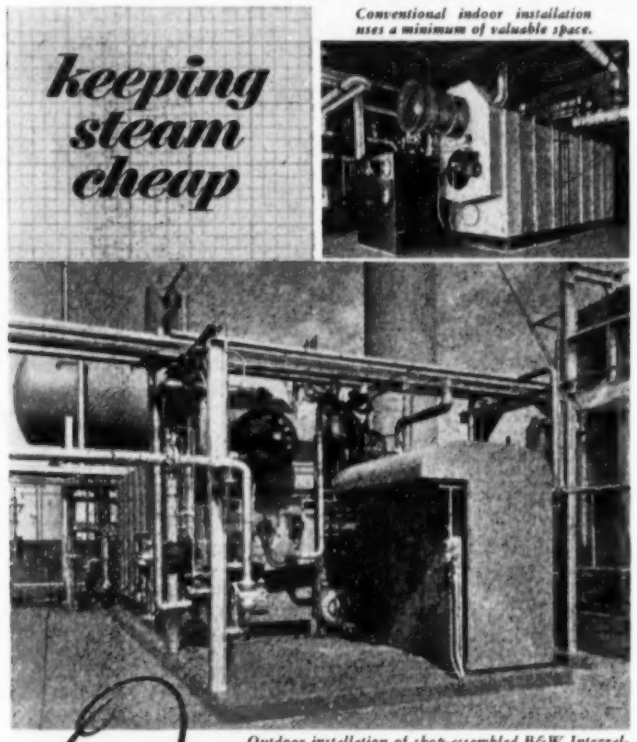
Open grating working surface is surrounded by downward moving stream of air . . . dust from grinding, polishing or sanding operations are pulled downward through grating . . . heavy-duty industrial viscous filters in rear compartment removes dust from air stream and axial flow fan in top of rear compartment discharges air vertically back into the room, or when required by local ordinance, discharges to outdoors through duct work. Solves the dust problem where hand grinders are used because of better dust collection due to higher velocity.

Write for descriptive bulletin, Dept. ***D***

WOLVERINE EQUIPMENT CO.
31 MAIN ST., CAMBRIDGE 42, MASS.

If you write maker identify as IEN - 2164

Conventional indoor installation uses a minimum of valuable space.



Outdoor installation of shop-assembled B&W Integral-Furnace Boiler, Type FM at a large Texas refinery.

Outdoors as well as indoors

save with the

B&W Integral-Furnace Boiler, Type FM

Outdoor installation of the shop-assembled, *B&W Integral-Furnace Boiler, Type FM,* is an important cost-saving advantage that is gaining wide popularity with users in all sections of the country. A high percentage of units sold to date are for outdoor operation under year-round weather conditions.

A completely water-tight, rigid steel casing encloses the entire boiler and furnace of this compact B&W steam unit. Designed to permit proper expansion and contraction of the unit's various components resulting from seasonal temperature fluctuations, the casing is welded for additional strength and tightness. A blanket of mineral wool plus over-all high-temperature insulation of walls, floor, and roof, minimizes heat loss through radiation.

For installation outdoors or indoors, this versatile, self-contained B&W steam generator is available in steam capacities ranging from 2900 to 28,000 lb per hr, at pressures between 15 and 250 psi. Total steam capacity of units now in service and on order for over 50 different industries, utilities, and other users here and abroad exceeds 5½ million lb per hr.

OTHER COST-SAVING FEATURES

Saves Erection Time and Cost • Meets Wide Range of Service • Handles Quick Load Changes • Fast Steaming • Low Maintenance • Easy Accessibility • Burns Oil and/or Gas • Saves Fuel • Saves Space • Safe, Automatic Operation

Write for Bulletin G-76, for an illustrated, detailed description of the many other cost-saving features of this unique unit. The Babcock & Wilcox Company, Boiler Division, 161 E. 42nd St., New York 17, N. Y.

BABCOCK & WILCOX

G-586

If you write maker identify as IEN - 2166

CONVEYING . . Counting section for packages riding a conveyor line

Source: LOGAN CO.
276 Cabel St., Louisville 6, Ky.

Work weight 8 to 75 pounds

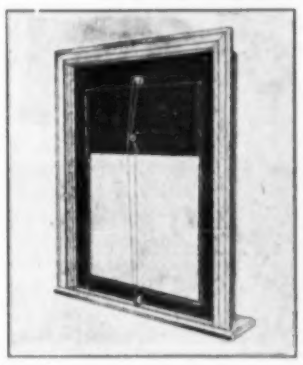
Packages measuring to 24 in. in length by 20 in. in width are received on the incoming end of this new counting section. They ride on a length of slat conveyor over a counting roller to a discharge slat section. The incoming section operates at 80 fpm. and the outgoing section at 100 fpm., both from a geared head motor drive. The difference in speed serves to separate the individual package units. As each passes over the centrally located roller its weight depresses the roller and counts one on a chain connected mechanical counter.

The section measures 52 in. in overall length by 10 to 20 in. in work width, as specified. Operation is at 40 packages per min. measuring 18 in. in length.

If you write maker identify as IEN - 2167

PHOTOGRAPHING . . Dark room shade excludes light at a window opening

Source: BAR-RAY PRODUCTS INC.
213 25th St., Brooklyn 32, N. Y.



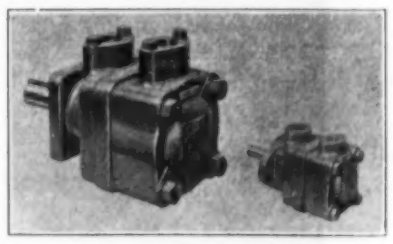
Sizes to order

Black shade that will not crack, fade or burn operates from a spring roller and rides in deep metal side guides. The new shade has no stitch holes and can be pulled down to completely exclude light transmission through a window opening. X-ray films and sensitive photographic plates can be exposed in the protected room without fear of light damage. The design does not interfere with room ventilation. Sizes are made to order.

If you write maker identify as IEN - 2168

MOTOR . . Balanced vane hydraulic in two sizes with rating at 5 to 26 hp.

Source: VICKERS INC.
398 Oakmar Blvd., Detroit 32, Mich.



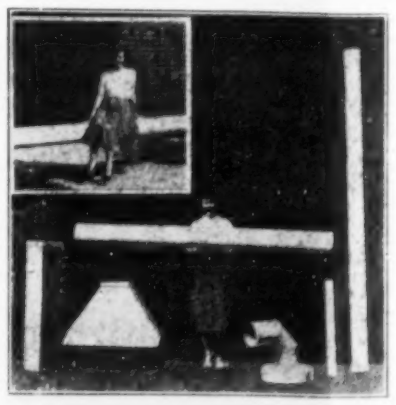
Ask for Bulletin M-5102

Compensation for wear is taken care of by the design of this new balanced vane hydraulic motor for a long continuous period of service. The motor features quiet operation and employs the company's rocking beam construction. It keeps all of the vanes in working contact with the cam ring that provides the pumping action. Series 200 and Series 500, each in flange or foot mounting, are available with ratings at 5, 6.5 and 26 hp.

If you write maker identify as IEN - 2169

PROCESSING . . Hoods, stacks, ducts, fittings for chemical plants

Source: HEIL PROCESS EQUIPMENT CORP.
12899 Elmwood Ave., Cleveland 11, Ohio



To your requirements

Corrosion proof fume ducts, hoods, accessory equipment are available in a new line employing polyester-glass combinations of solid plastic materials. Fabricated parts are comparable in strength with light metals and do not weigh as much. Maintenance is minimized due to the excellent acid resistance. The plastic will withstand operating temperatures to 200 deg. F. Various units in the new line are standardized in round and rectangular sections.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2170

THIS "BLOW HARD" MAKES A QUICK CLEAN-UP

Put a CLEMENTS-CADILLAC blower-suction cleaner into action and presto! — Dirt, Dust, and Grit vanish from every crevice of machinery and equipment. Then you can do some bragging—about this fast, easy, economical way to clean.

Eligible under C.M.P. regulations.

SAVE TIME • MONEY
PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 5 models with attachments for every cleaning job.

PORTABLE COMBINATION BLOWER-SUCTION CLEANER

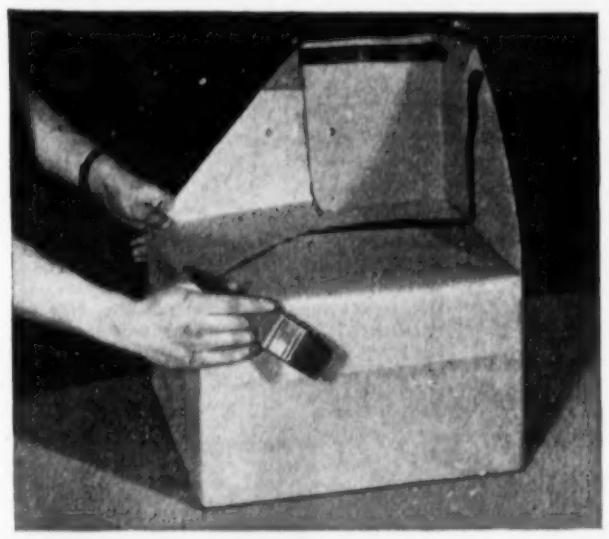
CLEMENTS CADILLAC

CLEMENTS MFG. CO.
6620 S. NARRAGANSETT AVE. CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

If you write maker identify as IEN - 2171

Comply With The New Case Liner Specification MIL-A-140A



With This *New Improved* Case Liner Glue By . .

Paisley SCIENTIFIC ADHESIVE SERVICE

An up-to-the-minute Government tested product, the new, improved Paisley Case Liner Glue handles all approved water resistant papers used for case liner work. Check these advantages:

1. Ready for use.
2. Long "open time" for efficient handling of large bags.
3. Fast Tacking when seams are folded.
4. Meets requirements of MIL-A-140A, dated Nov. 23, 1951. (Which supersedes JAN-P-140.)
5. All types and grades available:
   Type I . . for application by machine.
   Type II . . for application by hand.
   Grade A . . for subsistence items.
   Grade B . . for other than subsistence items.
   Class 2 . . Water Emulsion Adhesives.
6. Available in 1 gal., 5 gal., and 55 gal. containers.
7. Very Economical.

Contact your nearest Paisley office for Laboratory Reports and full price information.

PAISLEY PRODUCTS INCORPORATED
Division of MORNINGSTAR, NICOL, INC.

1770 CANALPORT AVENUE, CHICAGO 16, ILLINOIS • PHONE CANAL 6-2219
630 WEST 51st STREET, NEW YORK 19, N.Y. • PHONE COLUMBUS 5-2860

Manufacturers of Glues, Pastes, Resin Adhesives, Cements and Related Chemical Products

If you write maker identify as IEN-2173

The bonus values found in McGill Multirol roller bearings are worth money to you. They mean increased profit measured in terms of savings . . . through improved anti-friction performance. This better performance is due to the consistently higher degree of precision . . . that marks all McGill bearings. For smooth performance, low starting torque, minimum maintenance, ease of assembly, simplified lubrication, and long life in your roller bearing applications . . . investigate the McGill SE, CF and CYR Multirol bearings.

For informative literature write:
McGill Manufacturing Co., Inc., Bearing Division, 100 N. Lafayette St., Valparaiso, Indiana.

McGILL® precision bearings

If you write maker identify as IEN-2174

If you write maker identify as IEN-2175

1 buy... ARMORPLY

for 3-way savings

. . . SAVES YOU TIME. Armorply is *made to your order.* You get the exact size you need to eliminate cutting and fitting on the job. You speed up production.

. . . SAVES YOU TROUBLE. Armorply is *finished to your order.* You can get a variety of surfacing metals and finishes (bonded firmly to Weldwood® Exterior Plywood). You eliminate special finishing steps. (And you get strength greater than either wood or metal alone provides.)

. . . SAVES YOU TROUBLE. Order Armorply for what you make: truck bodies, refrigerators, elevator cabs, tote boxes . . . or whatever. And see how easy it is to make better products, at lower overall costs, with better profits, simply by using Armorply. *Mail this coupon today.*

UNITED STATES PLYWOOD CORPORATION IEN-2-53
World's Largest Plywood Organization
55 West 44th Street, New York 36, N. Y.

We are interested in Armorply for _____
Please send a free sample and data.
Name _____
Address _____
City _____ State _____

If you write maker identify as IEN-2176

GRINDING . . Abrasive disc machine puts flat on jet engine blade bases

Source: GARDNER MACHINE CO.
51 State Line Road, Beloit, Wis.

Big machine for a little job

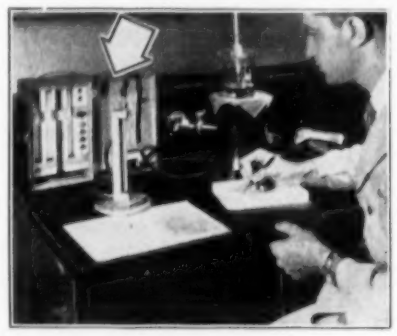
The base ends of jet engine blades are ground in this new No. 125-26 double spindle abrasive disc machine preparatory to a hardness test to be made on the ground surface. The machine mounts two grinding heads on dovetail slides riding ball bearing ways for adjustment toward and away from each other. Between the 26-in. discs that mount on the heads is a motor driven slot equipped wheel to take the work pieces.

A chain rides against the wheel, for that portion that lies between the discs, to hold the work in place and to release it after the grinding operation has been completed. Work pieces are placed by an operator at the front of the machine. Discharge also is in front of his position on a lower portion of the wheel. Variable speed wheel drive permits adjustment in a 3 to 1 ratio. Production is at 20 to 25 pieces per min. removing $\frac{1}{16}$ in. of metal from each end of the blade base.

If you write maker identify as IEN-2177

METER . . Flowmeter kit, portable for plant and laboratory

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.



Interchangeable tubes

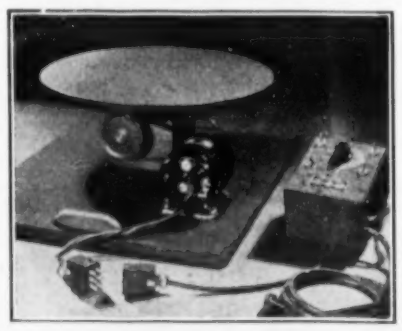
Four flow tubes, two calibrated black glass floats and four calibrated steel ball floats are assembled in a portable carrying case to make up this new flowmeter kit. Application can be made to measure flow rate of liquids and gases that do not attack glass or stainless steel. Overall range is 0.025 to 2,100 cc. per min. for liquids and 2 cc. to 38,000 cc. per min. for gases. The equipment is not designed for high pressure or temperature or for permanent installation.

Operation is on the variable area principle employing a tapered bore in the tube so flow area increases with the height of the float in the tube. This height is read on a scale engraved upon the tube and rate of flow is read from a graph supplied in an instruction book with each kit. Equipment includes a mounting stand and hose connections made of stainless steel.

If you write maker identify as IEN-2178

TURNTABLE . . Eighteen inch top rotates, oscillates, variable speed

Source: GALE DOROTHEA MECHANISMS
81-03 Broadway, Elmhurst, N. Y.



Variac control

Flexi-Turn is a new motor driven turntable that employs a Variac two-range speed control to operate the 1/15-hp. 110-volt dc. motor from a 110-volt ac. source. The control can be set for continuous operation in either direction. A knob on the housing face can be turned to set the speed at any point maximum at either 10 or 20 rpm. The speed can be brought up quickly or slowly to the desired maximum. The direction switch can be moved back and forth for oscillating action if desired.

The table mounts on a 24 by 20 in. base plate and rotates an 11 in. circular top casting. It supports an 18-in. plywood top disc. Load capacity is maximum at 200 pounds. The motor is belt connected to a speed reducer beneath the table assembly. Automatic control can be specified for stop and go rotation or oscillating movement.

Identify as IEN-2179

Yale trucks and allied equipment by Yale & Towne Manufacturing Company are now available for rent in a new nationwide plan operated by the company in connection with C.I.T. Corporation. The company will negotiate leasing agreements for the equipment. C.I.T. then will purchase it and lease to the user for an agreed length of time.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-2180

DIRECT PRESSURE CAN FILLING MACHINERY

FLAT PLATFORM MECHANICAL TRIP

Available with flat or roller platforms having electric or mechanical tripping devices.

Fills container capacities from 1 pint to 5 gallons inclusive.

Rectangular welded frame with dome casters 14½" wide, 25" deep, 36" high.

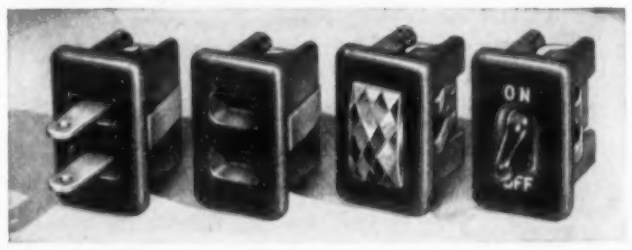
Filling valve attached to 1½" pipe.
Nozzle size from ¼" I. D. to 1½" I. D.

Write for illustrated bulletin, "Direct Pressure Can Fillers"

THE VOL-U-METER COMPANY
BUFFALO 16, N. Y.

If you write maker identify as IEN-2181

Boost production . . .



Of Electronic or Electrical Assemblies — Defense or Civilian — With "Diamond H" Snap-Ins

***Save Man Hours —** toggle switches, pilot lights, convenience outlets and inter-connecting load plugs just snap into their holes. Wire them up before or after. Spring clips hold them firmly and permanently. Wide flanges eliminate need for exacting tolerances in finish around installation holes.

***Get Peak Performance**—simple in design, rugged in construction, "Diamond H" Snap-Ins are built to give positive, unfailing action under demanding service conditions.

Switches, both single and double pole, have contacts held together under positive spring action in "on" position. Rated **15** and 20 A, 125 V; 10 A, 250 V., A. C., and also available with horsepower ratings. Pilots, rated 115 V or 230 V, A. C., have large faceted lenses to give greatest light output of any comparable pilots on the market. All available in black, white, brown or special color plastic.

Write today for complete details.

THE HART MANUFACTURING COMPANY
201 Bartholomew Avenue, Hartford, Connecticut

If you write maker identify as IEN-2182

If you write maker identify as IEN - 2183

FAST SERVICE ANYWHERE

ON FIBRE WASHERS

One Washer . . .
or thousands . . .
For Maintenance or
production . . .
made to exacting
size and specifications
for mechanical and
electrical purposes.

Fast service on
VULCANIZED FIBRE
LAMINATED PHENOLICS
Sheets • Rods • Tubes

PENN FIBRE & SPECIALTY CO.
2026 East Westmoreland Street
Phone REgent 9-4862
PHILADELPHIA 34, PA.

If you write maker identify as IEN - 2184

FOR MATERIAL HANDLING—
more and more—the swing is to wide-base pneumatic tires

GENERAL
INDUSTRIAL PNEUMATIC TIRES

More Designers are specifying wide-base General Pneumatics. They know Generals add these extra selling points to handling equipment.

SAVE TIME • MONEY • LABOR

- MORE LOAD CAPACITY AT LOW OR HIGH SPEEDS
- CUSHION EQUIPMENT AND LOADS REDUCING BREAKAGE AND SPILLAGE
- SAVE HIGH COST FLOORS AND FLOOR SURFACES
- SLOW, EVEN WEAR FOR LONG SERVICE
- HIGH FLOTATION FOR EASIER ROLLING OVER SOFT GROUND
- ROLLS EASIER, SMOOTHER OVER ALL SURFACES

Available separately or in assemblies of Tires, Tubes and Wheels. Size O.D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

THE GENERAL TIRE

Rigid CASTER FORKS Swivel

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

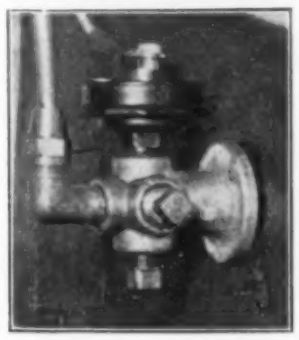
SEND FOR CATALOG . . . DEPT. 6

THE GENERAL TIRE & RUBBER CO. AKRON, O.

If you write maker identify as IEN - 2186

SWITCH . . Pressure operated to signal drop in vehicle air line

Source: ROCHESTER MFG. CO.
199 Rockwood St., Rochester 10, N. Y.



Warns against trouble

Diaphragm, assembled in a steel housing measuring 1½ in. in diameter, is the actuating means in this new pressure operated switch. Application is in the air pressure line to a motor vehicle's brakes. The diaphragm moves to close the switch contacts and sound a signal or light a warning lamp when pressure falls below 60 pounds or other specified point.

The switch has been designed to meet the requirement that will be in force after June 30th, 1953, in which each bus, truck and truck tractor, equipped with air brakes must be provided with an audible or visual warning signal against pressure failure in the air brake line when the vehicle is to be employed in interstate traffic.

If you write maker identify as IEN - 2187

DRAFTING . . Pressed wood board with paralleling guide and spacer

Source: BRADFORD BAILEY CO.
P. O. Box 440-69, Elizabeth, N. J.

$2.50, $3.50, $5

Par-L-L-Er is a new drafting board equipped with a horizontal guide edge held in position by connecting cords. They prevent it from getting out of line in any position between the top and bottom of its movement over the board. An indicating spacer slides on the edge so vertical or angular lines can be drawn at set distances apart without having to measure separately. The board applies on a desk or drafting table. It is available in three sizes: 12 by 13 in., 15 by 19 in. and 21 by 25 inches.

If you write maker identify as IEN - 2188

HANDLING . . Adjustable reel for light weight coils of wire

Source: HYKON MFG. CO.
167 E. State St., Alliance, Ohio

Brake prevents coasting

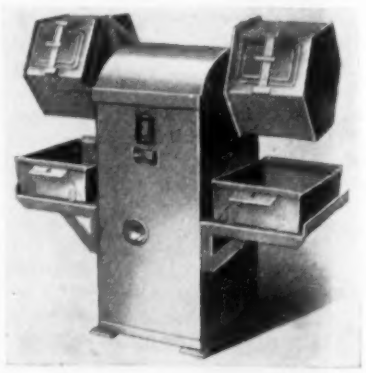
Cross pins on which a coil of wire can ride apply in holes arranged radially in the spokes of this new reel. The spokes are bound at their outside ends by welded wire rings. Their center hubs mount on a cross tube secured to an open front floor stand. The spoke assembly on the open side can be removed from the central tube separately so a coil can be slid off the pins. The wire rims provide for turning the coil by hand pressure.

Two sizes measure 25 and 30 in. in outside diameter. The pins are adjustable for inside coil diameter from 6¾ to 18¾ in. on the smaller unit and from 6¾ to 21 in. on the larger one. Coil width is 7¼ in. in both. List prices are $32 and $40.

If you write maker identify as IEN - 2189

TUMBLING . . Two barrel assembly with variable speed ¾ hp. motor drive

Source: RAMPE MFG. CO.
3318-22 St. Clair Ave., Cleveland 14, Ohio



Barrels detach

Hexagon barrels, made of steel, are mounted on a ball bearing shaft for variable speed drive by a ¾-hp. 220-volt three-phase motor in this new assembly. Barrel dimensions are 10¾ by 17 inches. The design can be plain or lined with vinyl plastic. Standard equipment includes two tote boxes into which the barrels can be emptied and perforated barrell covers so liquid can be drained prior to work discharge. Control centers at a water proof starting button on the front of the housing. List is $535 unlined, $615 lined.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2190

"On machinery steps and platforms—
Wherever it is put—
Multigrip, the non-skid plate
Means safety underfoot."

U·S·S multigrip FLOOR PLATE

UNITED STATES STEEL CORPORATION, PITTSBURGH
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, CHICAGO
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Sold by leading distributors from coast to coast 2-401

UNITED STATES STEEL

If you write maker identify as IEN - 2191

FLEXIBLE STORAGE FAST SELECTION

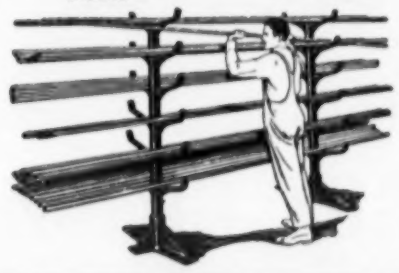
Time lost and hauling each bar from the old style, closed side rack is readily saved with Brown Time-Saving Racks which require only inches of side movement. Each length, width, and thickness of stock is displayed in "goldfish" visibility for quick selection. Waiting workmen are served promptly. Additional storage capacity can be added at any time by ordering one or more of the interchangeable units.

Respacing the units is easy, since standard racks need not be anchored or braced unless crane loaded. This storage flexibility can be further extended by adding or subtracting arm-holding sections.

Brown Racks are simple, durable, made of metal in five standard models. They can't burn, sag, or twist. Depreciation is practically nil. Lined up in soldierly rows, they make a neat orderly appearance, which not only builds employee enthusiasm, but generates a more respectful attitude toward economies in general.

SEND FOR BULLETIN NO. 26N

BROWN'S QUICK-SERVE RACKS

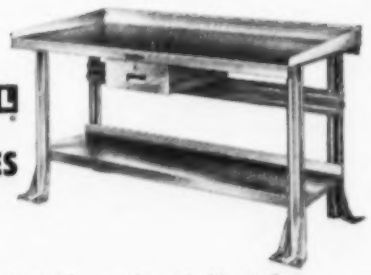


BROWN ENGINEERING CO.
122 NORTH 3RD ST. READING, PENNA.

If you write maker identify as IEN - 2192

standardize on standard

HALLOWELL WORK BENCHES



HALLOWELL FEATURES

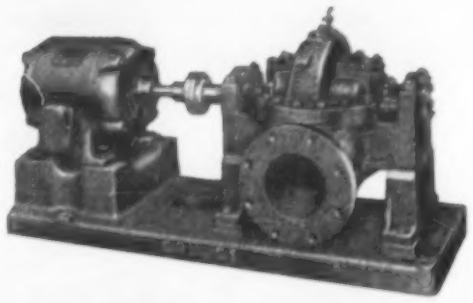
- Sturdy, rigid—require no bolting to floor
- 4 lengths, 3 widths, 3 heights—all standard
- 3 top materials—steel, Presdwood on steel, laminated wood
- Use them as single units or continuous benches of any length
- Functional design, neat appearance

Standardized construction with *standard* accessories permits you to *custom build* HALLOWELL benches to fit your requirements. Stocked and sold by industrial distributors. Write for literature. SPS, Jenkintown 14, Pa.

Our Fiftieth Year : A START FOR THE FUTURE

HALLOWELL SHOP EQUIPMENT DIVISION SPS JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN-2193



The new Goulds Fig. 3405 double suction, single-stage centrifugal pump for general purpose liquid handling.

This new pump gives you 5 BIG COST ADVANTAGES

1. Interchangeability of parts (1) increases flexibility in making field changes to meet different requirements; (2) simplifies spare parts inventories.
2. Completely new design incorporates many quality features usually considered as "extras."
3. Compact construction means real floor-space savings.
4. Stuffing box flexibility permits quick interchange of packing box with gland or mechanical seal, as your service requires.
5. You can change impeller rotation from right-hand to left-hand without construction changes.

Bulletin 721.6 gives you complete details, including Specs, interchangeability tables, efficiency curves.

Goulds PUMPS INC. Seneca Falls New York

If you write maker identify as IEN-2194

NEW...ENGINEERED FOR PAINTING!

GPX GREEN

PLASTIC-FACED PLYWOOD

Completely new and especially designed to make painting faster and easier, GPX GREEN offers you the finest painting surface obtainable. Here are the features which will save time and money for you:

1. Can't crack or check.
2. Reduces grain raise.
3. Can be covered with one coat.
4. Makes paint last up to 3 times longer.
5. Smoother, needs no sanding.
6. Maximum bending.
7. All-purpose for interior or exterior use.

GPX GREEN will cut your maintenance costs, speed your manufacturing operations. This plastic-faced plywood is the ideal material for Exterior and Interior Sidewalls, Cabinets and Built-Ins, Children's Furniture and Toys, House Trailers, Displays and Fixtures, Outdoor Signs and wherever a smooth paint surface is desired. Write today for further information.

GEORGIA—PACIFIC PLYWOOD COMPANY
614-A2 North Capitol Way, Olympia, Wash.

OFFICES OR WAREHOUSES IN: Augusta, Baltimore, Birmingham, Boston, Chicago, Cleveland, Columbia, Detroit, Fort Worth, Lancaster, Los Angeles, Louisville, Memphis, Nashville, Newark, New Castle, New Hyde Park, New Orleans, Olympia, Orlando, Philadelphia, Pittsburgh, Providence, Raleigh, Richmond, Savannah, Vineland.

For complete data, fill in and mail this coupon *today*

Georgia-Pacific Plywood Company
Plastic Plywood Division
Marsh Street
Port Newark 5, N. J.

Please send me Free Technical Data Manual on GPX GREEN plastic-faced plywood.

NAME.....
FIRM NAME.....
.....
FIRM ADDRESS.....
CITY.....STATE.....
POSITION.....

If you write maker identify as IEN-2196

CUTTING . . Acetylene torch machine for teeth in gear and sprocket blanks

Source: COGMATIC CO.
1328-32 N. Franklin Place, Milwaukee 2, Wis.

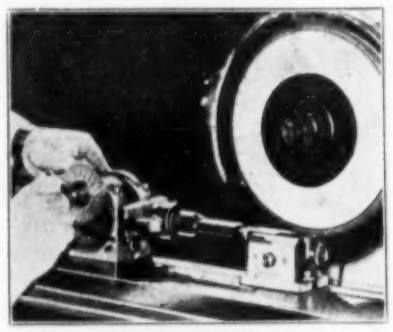
Technical information upon request

About 300 shapes and sizes of teeth with 5 to 200 teeth per blank in diameters from 3 to 108 in. can be torch cut in plate steel blanks by this new machine. It mounts work spindles for production of three gears or sprockets at a time employing three torch heads when the work diameter does not exceed 15 inches. It will cut two at a time to 25 in. in diameter and will handle the maximum 108-in. diameter with one head and work overhang as shown in the illustration. The cutting head also can be equipped with a coolant stream to harden the work as it is cut.

If you write maker identify as IEN-2197

INDEXING . . Dividing head to position work on a machine table

Source: MARVIN MACHINE PRODUCTS INC.
414 Ford Bldg., Detroit 26, Mich.



Tilts 125 degrees

Model D-1400 is a new dividing head with a headstock assembly mounted in trunnion bearings. The arrangement permits tilting the spindle from 5 degrees below horizontal to 30 degrees beyond vertical. The spindle carries a No. 2 Morse taper and a 1-in. 10-thread end to make face plates or driving dogs. Swing is 4¼ in. above the table. Gear ratio is 40 to 1. Three plates are supplied to provide even index spacings between 16 and 20 odd spacings between 15 and 49.

A tailstock, also available, is fitted with two pins for horizontal alignment with the headstock. These pins can be removed and the tailstock center assembly raised in its base for angular setting in line with the tailstock spindle when it is set at an angle. List price is $125.

If you write maker identify as IEN-2198

COUNTING . . Photoelectric equipment accumulates count of passing objects

Source: PHOTOSWITCH INC.
75-79 Broadway, Cambridge 42, Mass.

Ask for Bulletin PA 506

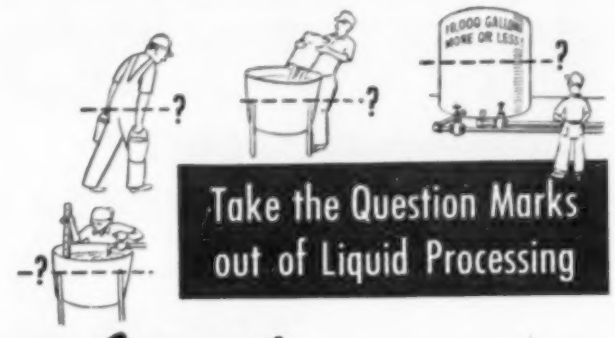
Operating speed is to 600 counts per min. for this new Type PIC photoelectric equipment. It includes a light source, the phototube, a control housing and a counter with six digit wheels. The required interconnecting lines and fittings are supplied. Operation is on 110-volt 60-cycle ac. to supply power for the light source and the counter. Plug-in connectors are included for quick set up. Operating range is maximum at 6 ft. between the phototube and the light source. Special light sources are avilable for longer ranges. The equipment illustrated represents further development of Type P2C previously described IEN-10237-50.

Identify as IEN-2199

New installation of blanking presses at one of the General Motors plants includes a basement under the equipment filled with the largest assembly to date of May-Fran Engineering's scrap handling conveyors. There is capacity to handle 250 ton of scrap per day. Twenty collecting conveyors measuring 60 to 165 ft. in length ride at right angles with a main conveyor measuring 1,144 feet in length by 4½ ft. in width. The main conveyor feeds a scrap baler. It ejects to a power conveyor riding up to a chute that directs the bales into railroad cars.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-2200



Take the Question Marks out of Liquid Processing

WITH *Accurate* NEPTUNE METERS

Why use *wasteful* methods when accuracy is so *easy*? End spoiled batches, overfilling, spillage . . . eliminate slow weighing . . . with simple, dependable Neptune meters.

AUTOMATIC BATCH CONTROL: Ask to see the new Neptune "432" Auto-Stop—the meter that makes batch mixing *automatic*. It's just one of *many* Neptune liquid meters. For quick facts, ask for copy of Bulletin 566-JI.

NEPTUNE METERS for *100* Industrial Liquids

NEPTUNE METER COMPANY
50 West 50th St., New York 20, N. Y.

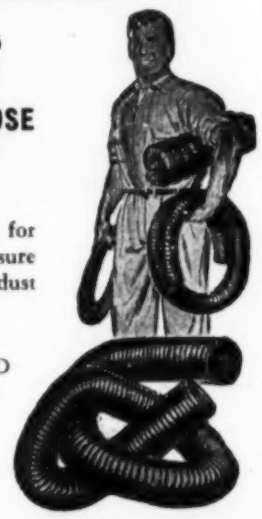
Branch Offices ATLANTA • BOSTON • CHICAGO • DALLAS • DENVER NO. KANSAS CITY, MO. • LOS ANGELES • LOUISVILLE PHILADELPHIA • PORTLAND, ORE. • SAN FRANCISCO

If you write maker identify as IEN-2201

FOR VENTILATION FUME AND DUST CONTROL AIR CONDITIONING

FLEXAUST

SPIRAL-REINFORCED HOSE LIGHT, STRONG AND VERY FLEXIBLE



Flexaust is of proved suitability for a wide variety of suction and pressure uses in ventilation, fume and dust control, air conditioning.

EXTREMELY EASY TO INSTALL — EFFICIENT AND ECONOMICAL IN USE

SIZES: 1¼" to 28" dia.

Various Flexaust types, accessories, and other hose types also available:

BLOFLEX
Non-reinforced
Collapsible hose

PORTVENT
Ring-reinforced
retractable hose

Write for full descriptive data and prices

AMERICAN VENTILATING HOSE CO.
Dept. IE-2, 100 Park Ave., New York 17, N. Y.
Plant: Amesbury, Mass.

If you write maker identify as IEN-2202

Dependable
MEASURING & CHECKING EQUIPMENT

and Now
HAND WHEELS, KNOBS, HANDLES
Cadmium Plated READY TO DELIVER
Non-rusting — good looking

Send for Complete Catalog

We also build jigs, fixtures, special tools and machinery. Send us your blueprints.

MACHINE PRODUCTS CORPORATION
6761 E. McNichols Road • Detroit 12, Mich.

If you write maker identify as IEN - 2203

9 lb. baby with a ton bite

Burndy's Y34A Hypress, easily portable at 9 lbs., develops 18,000 lbs. of force hydraulically for installation of Hydent connectors on #6 Str. thru 500 Mcm cable.

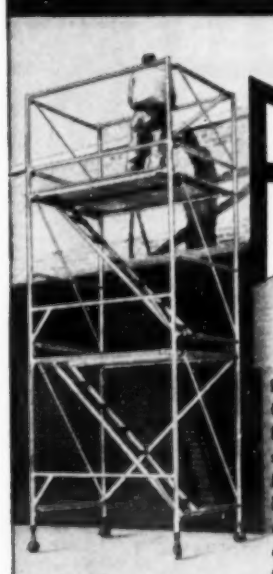
Ask your Burndy Distributor

BURNDY

NORWALK · CONNECTICUT

If you write maker identify as IEN - 2204

No Acrobatics! No Flip-Flop!



with the **FOLD-A-WAY** TRADE MARK **SCAFFOLD**

HERE'S WHY: For erection, the end frames of this new aluminum scaffold swing open *sideways* while the scaffold is in *standing* position. Maximum swing of any component is 90 degrees, so the erector is always *within* the base area. With exclusive design features such as these, FOLD-A-WAY Scaffolds bring you new safety, ease of handling and speed. One man erects the base section in *less than a minute.*

Write for illustrated Bulletin ASF-1.

Safer, the FOLD-A-WAY Scaffold stands freely and will not "fold under" during erection; upper folding sections stand with only two legs in position. Superior construction features include coped and *full-welded* joints, LOKT-RING adjustable legs with casters that lock at both wheel and swivel by one lever action. Standard Sectional Aluminum Rolling Scaffold may be used on FOLD-A-WAY base. UL approved.

LOKT-RING LEG
Push down and turn ring to lock leg securely; release ring for quick, safe height adjustment. *No danger of pinched fingers.*

Aluminum Sectional Ladder Scaffolds are extremely mobile. 24" width permits use in restricted areas. 6', 8' and 10' spans; ladders 4'3", 5'8" and 6'1" high slip together easily for desired height. UL approved. Write for Bulletin PSS-20 (R).

WHATEVER THE NEED . . .
When it comes to ladders and scaffolding, come to P. S.

GOLD MEDAL LADDERS SCAFFOLDING — for Greater Safety . . . Efficiency . . . Economy

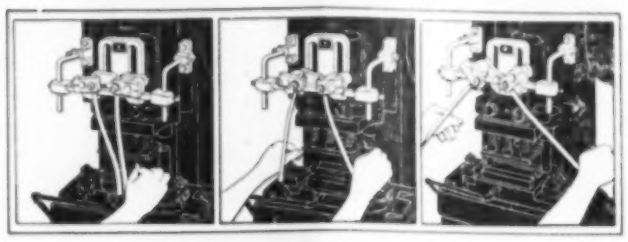
THE PATENT SCAFFOLDING CO., Inc.

38-21 12th Street Dept. IEN Long Island City 1, N. Y.
West Coast Plant: 6931 Stanford Ave., Los Angeles, Calif.

If you write maker identify as IEN - 2206

PROTECTING . . Press guard sweeps operator's hands to the sides

Source: COOPER WEYMOUTH INC.
275-79 Noble Ave., Bridgeport 8, Conn.



Note double sweep action

Two guard arms stand in vertical position, with support in pivoted brackets on a press ram to which this new guard has been assembled, when the ram is in "up" position. Releasing the clutch to make a hit causes the arms to swing outward as the ram comes down. The movement sweeps an operator's hands to the two sides away from the danger area. The arms can be formed to meet given tool and work requirements. The actuating brackets on the two sides also can be set to fit various press designs. List price is $58.

If you write maker identify as IEN - 2207

CONTROL . . Humidistat controls 15 amp. 110 volt circuit

Source: ABBEON SUPPLY CO.
179-17 Jamaica Ave., Jamaica 32, N. Y.

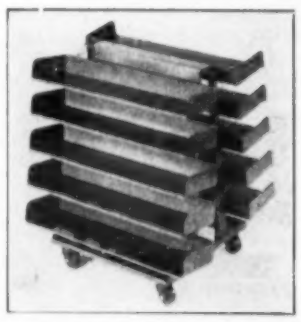
List is $35

Human hair is the actuating element in this new plug-in humidity controller. It is designed to mount on a wall. It measures about 2¾ by 3 by 7 inches. Its operating relay is enclosed in a hammer finish enameled housing. The unit can be set for relative humidity in a range between 10 and 95 per cent to turn humidifying equipment on and off during a winter season or to control dehumidifying equipment in the summer months when employed.

If you write maker identify as IEN - 2208

TRUCK . . Caster mounted rack carries hook-on work handling trays

Source: ALL PURPOSE METAL EQUIPMENT CORP.
257 Mill St., Rochester 14, N. Y.



$65.50 with 10 trays

TR Jr. designates a new general purpose caster mounted rack measuring 24 by 24 by 36 in. to take 10 hook-on trays that measure 9 by 3 by 32 inches. The casters are 3 in. in diameter. Two are swivel and two are rigid. Larger units can be specified.

The trays and rack are made of welded steel finished in baked gray enamel. Handles at the top of the rack, in the center, permit an operator to grasp the unit for movement from one location to another. The trays can be removed and secured to wall or table brackets or floor racks, all of which are available in the company's material handling lines.

If you write maker identify as IEN - 2209

MIXING . . Laboratory stirrer drives adjustable impeller shaft

Source: EBERBACH CORP.
P. O. Box 63-A, Ann Arbor, Mich.

Cord carries switch

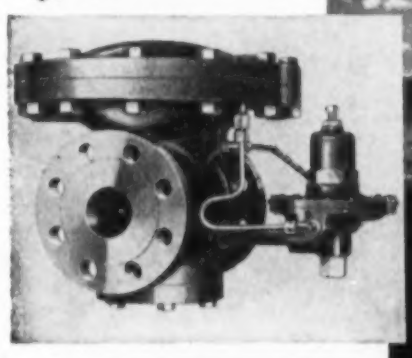
The impeller shaft in this new Hollow Spindle stirrer passes through the shaft of a shaded pole motor. It is held by a chuck mounted on the lower end of the shaft in an arrangement that permits length adjustment. The motor operates, without danger of sparking, at 1,550 rpm. The unit can be equipped with a glass, metal or plastic impeller and with a shaft measuring 7/32 to 1/16 in. in diameter.

The motor shaft is mounted in sintered bronze bearings that require no lubricating attention. Motor dimensions are 3¼ in. in diameter by 2⅞ in. in height. The complete unit weighs 2¾ lb. without the impeller. List price is $22.50.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2210

THE *Old Faithful* OF STEAM PRESSURE REDUCTION



FISHER® TYPE 92A
PILOT OPERATED CONTROL VALVE

SINGLE SEATED TIGHT CLOSURE

Two interchangeable pilot assemblies available for high or low pressure service.

Power engineers everywhere have ok'd the FISHER TYPE 92A for steam pressure control! It's an accurate, compact, flexible, sturdy controller, designed, built and proved to meet the **most exacting requirements** for steam service.

WRITE FOR BULLETIN C-3

FISHER GOVERNOR CO.
MARSHALLTOWN, IOWA

If you write maker identify as IEN - 2211

DON'T DELAY!

protect your shipments with Counterboy No. 120

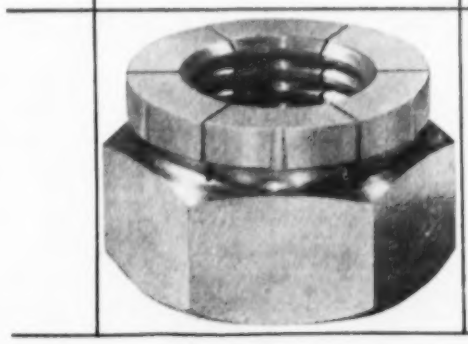
- **Adjustable Moistening Control with optional heater, makes No. 120 the leading all-purpose sealer for fast, permanent sealing of containers, prepacks, and parcel post.**
- Water heater (optional) reactivates glue faster for a tighter bond. Thermostat controlled. Illuminated switch: 9 ft. cord.
- Counterboy Moistening Control assures deep penetration of any tape glue — maintains efficiency!
- Scale provides selective measuring for varying size cartons — repeat lengths for carton runs.
- Handles tape 1" to 3", adjustable for 4" widths; delivers 4" to 36" strip lengths.
- Can be equipped with printing attachment to mark your cartons as it seals.

For literature, write—

Better Packages, INC.
Plant No. 2 • 253 Canal Street
SHELTON, CONNECTICUT

If you write maker identify as IEN - 2212

they won't work loose



FLEXLOC Self-Locking Nuts lock and stay tight, no matter how severe the vibration. Yet they can be easily removed and reused repeatedly. They are stop nuts too; they stay put in any position on a bolt when the locking threads are fully engaged. And FLEXLOCS are one piece, all metal—nothing to assemble, come apart, lose or forget. See your local industrial distributor for literature and samples or write SPS, Jenkintown 14, Pa.

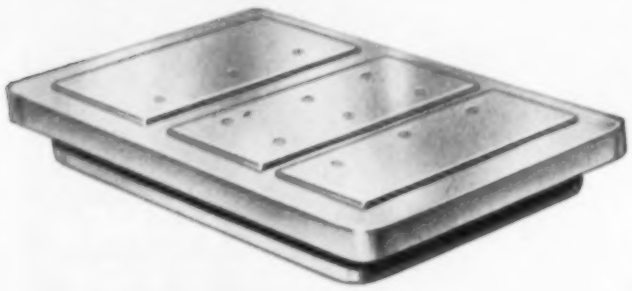
Our Fiftieth Year : A START FOR THE FUTURE

FLEXLOC LOCKNUT DIVISION

SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN-2213

PRATER PERMANENT MAGNETS



HIGH FREQUENCY EXTRA STRENGTH

Reaches inches deep into flow to weed out all unwanted tramp iron. Operates with powerful Alnico magnets. No visible nuts, bolts or sharp edges to hinder production. No complicated adjustments or wiring problem. Many trouble-free years of dependable service. Easily installed at any point of flow on most metal or wood constructions. Send for complete facts, today.

PRATER PULVERIZER COMPANY
1536 S. 55TH COURT • CHICAGO 50, ILL.

If you write maker identify as IEN-2214

(FLINTY HARDNESS)

HARD RESURFACER FOR CONCRETE

- "Roll a truck a foot on FLINTZ ▪▪▪ and it will coast another!"
- The ONLY PREPARATION for placing Flintz is CLEANING THE FLOOR ▪▪▪ without cutting.
- Placing Flintz is LIKE SPREADING MOIST SAND.

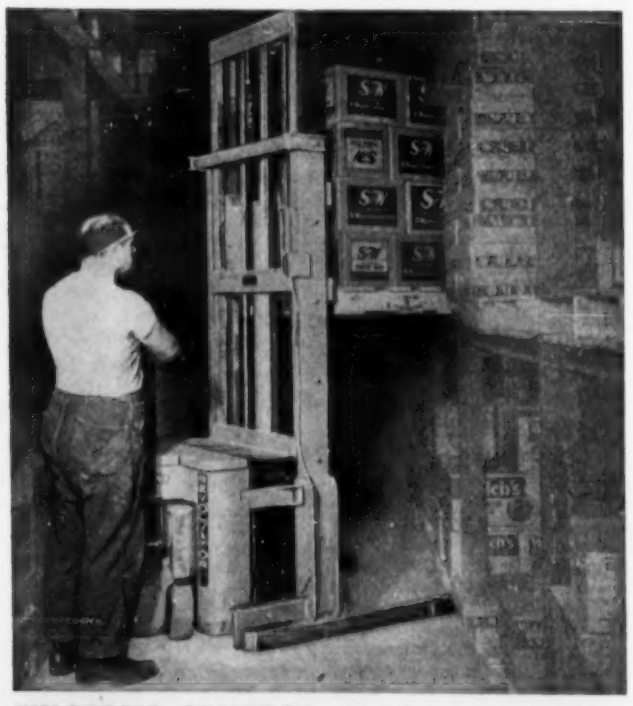
Some concerns have used thousands of bbls. of our resurfacers — just finished placing a 350 bbl. order for a world-wide concern—and would be de-lighted to furnish materials or install for you at your option.

"KEEP 'EM ROLLING"

Write today for FLINTZ booklet, "Keep 'Em Rolling" for full details, or address inquiries to:

DURA-TRED CO. SINCE '38
349 N. CENTRAL PARK BLVD • CHICAGO 24, ILL.

If you write maker identify as IEN-2215



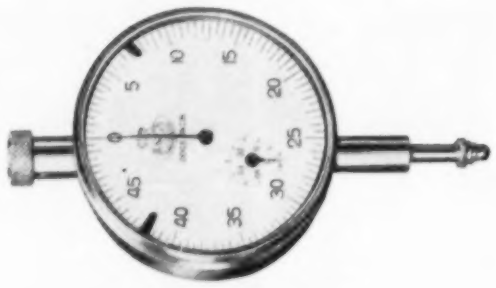
FINGERTIP CONTROL—Revolvator Go-Getter—telescopic straddle type lift truck—a bear for work in crowded areas, narrow aisles. Fully automatic—extraordinarily maneuverable 200° turning arc—2500 lb. capacity—very slight operator training necessary. Write for full details of this and many other models.

REVOLVATOR CO. 8759 TONNELE AVENUE NORTH BERGEN, N. J.

If you write maker identify as IEN-2216

GAGE . . Stainless dial indicator, 0.4 in. range, 0.0005 in. graduations

Source: ALINA CORP.
401 Broadway, Room 705, New York 13, N. Y.



Made in Switzerland

Stainless steel is employed in the forged case, the integral stem, the hardened spindle and the dust proof stem cap in this new Etalon dial indicator. The case is fitted with a stationary dust proof bezel and a clear plastic crystal that will not break or discolor. The stem cap is turned to set zero position. Two tolerance hands are individually adjustable around the dial.

A small hand below the large central one registers complete revolutions, to a total of eight representing 0.4000 in. of spindle movement. A tungsten carbide contact point is standard equipment. Overall case diameter is 2¼ inches. A lug, on the back of the case, carries a ¼-in. mounting hole.

If you write maker identify as IEN-2217

ROCK DRILLING . . Portable machine for ½ to 4½ in. holes in concrete

Source: PENNSYLVANIA DRILLING CO.
1211 Chartiers Ave., Pittsburgh 20, Pa.

About $450 without bits

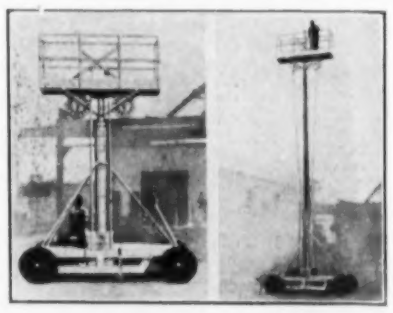
Holes can be drilled at any angle through masonry walls, floors, ceilings for installation of pipe lines and conduit by application of this new Model-E portable electric machine. It employs diamond set bits or core barrels depending on the hole size. Water feeds from an overhead tank to assist in the cutting action.

Feed is by hand to move the motor drive and drilling spindle along the supporting column. The machine is available with gearing to operate at either 250 or 900 rpm. at the spindle. These gears are interchangeable in the field. The machine weighs about 200 pounds. It is particularly designed for maintenance and construction. Drill bits that have been worn in service can be returned to the company for salvage at a price considerably less than that for new bits in corresponding size.

If you write maker identify as IEN-2218

SCAFFOLD . . Telescopic tower positions workers 38 ft. above ground

Source: HAMLIN-KLOCK CO.
26-30 N. Marengo Ave., Pasadena 1, Calif.



For men and materials

Platform, measuring 8 by 4 ft. on this new tower, is mounted on a telescoping column on a wheel equipped base. It provides a means to position workers at a desired elevated height to a maximum of 38 ft. above the ground. Elevating power is a hydraulic pump driven by a 7½-hp. driven by a 7½-hp. Wisconsin engine. Control centers both Wisconsin engine. Control centers both on the ground and on the platform. Load capacity is 6,000 pounds.

Worker safety is promoted by means to control the descent rate in the event of a complete rupture of the hydraulic line and by a by-pass valve at ground level for lowering in the event of control failure on the platform. A 6-in. kick board retains tools and loose materials on the platform. A guard rail surrounds it. Four stabilizing jacks are mounted on the base. They can be retracted when the unit is to be moved to a new location. Clearance height is 13½ feet lowered.

Identify as IEN-2219

Take a sub-assembly of selenium rectifier, capacitor, resistor, transformer. Arrange them neatly with the required protruding terminals and then cast the whole works in a rectangular block of plastic sealing material. Don't try to do it yourself. Instead ask Federal Telephone & Radio Corporation to do it for you in its new encapsulating process.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-2220

The badge of quality on your product

The users of your product respect the name Marsh on a pressure gauge or dial thermometer. Adopt Marsh Instruments and you will know why they have become "The Standard of Accuracy". There is a Marsh for every service.

Ask for this new catalog... It covers your instrument requirements.

MARSH INSTRUMENT CO.,
Sales affiliate of Jas. P. Marsh Corporation,
Dept. A, Skokie, Ill. *Export Dept.*, 3501 Howard St., Skokie, Ill.

If you write maker identify as IEN-2221

FABRICATED SCREENS STRAINERS

TO YOUR SPECIFICATIONS

• PRODUCTION RUNS

• HIGH QUALITY

NEWARK offers a "complete package" service in the design and manufacture of fabricated woven wire parts. We design and manufacture screens and strainers for all types of service; for handling oil, water, gasoline, air, corrosive gases or steam.

We manufacture the wire cloth, thus insuring its accuracy; we also do all the necessary cutting, forming, soldering, stamping, punching, welding and seaming. In other words, it's a NEWARK job from start to finish.

Newark Wire Cloth COMPANY
351 Verona Avenue • Newark 4, New Jersey

NEWARK for ACCURACY

If you write maker identify as IEN - 2223

SUCCESSFULLY USED BY LARGE AND SMALL PLANTS . . .

PRECISION ANGLE PLATE AND VISE . . .
that does everything!

Made of case hardened steel. Precision ground and square all over. Puts clamping pressure directly on right spot; holds any position securely, and serves many purposes better than any other squaring device. Ideal for home mechanic, or plant.

Max. opening 2¼"; weight 5¼ lbs. Larger sizes available. Order now for prompt delivery.

AS LOW AS **38.50**

WRITE FOR FREE CATALOG

If you write maker identify as IEN - 2224

Sheehan's SPECIAL APPLICATION

HOT FORGING CONVEYORS

SAVE TIME—SPEED PRODUCTION AND SAVE YOU MONEY

Cost Less To Run— Less To Maintain

It is no longer necessary to waste manpower and valuable time handling hot forgings in the nut and bolt, and allied industries. This unusual Sheehan conveyor hugs the floor at an eleven inch height and picks up forgings on a heavy duty, high carbon, Steel Woven-Mesh Belt. 75 degree incline provides maximum lift in minimum space. Positive drive, spike-studded pulley at drive-end of belt eliminates all slippage due to heat expansion. Open mesh belt provides cooling of forgings and allows scale to fall through.

Built to withstand continuous performance at peak loading, a Sheehan conveyor can handle your forgings problems with ease, and do it economically too.

COMING SOON . . . MORE UNUSUAL CONVEYORS BY SHEEHAN

Send today for complete literature on the Sheehan line of Forging Conveyors. No obligation, of course.

If you write maker identify as IEN - 2225

DIAMOND FIBRE BOXES
FOR LIGHT, EASY PARTS HANDLING

This is a typical materials handling job designed, fabricated, and lettered by C-D-F. Low-cost, lightweight Diamond Fibre was used. Fibre is strong, oil resistant, and can be readily formed. All work was done in the same C-D-F plant that made the fibre . . . one order solves your worries.

If you buy boxes, barrels, trucks, trays, receptacles of any size or shape . . . think of C-D-F, makers of top-quality Diamond Vulcanized Fibre. Talk to the man who knows . . . your C-D-F sales engineer . . . sales offices in principal cities. Write for big Receptacles Catalog and free Plastics Machining Notebook.

THE NAME TO REMEMBER . . . DIAMOND FIBRE RECEPTACLES

Continental-Diamond Fibre Company
NEWARK 21, DELAWARE

If you write maker identify as IEN - 2226

TRUCK . . Power lift fork design, engine drive, ½ and 1 ton ratings

Source: TRANSITIER TRUCK CO.
2475-79 N. W. 23rd Ave., Portland 10, Oregon

Extra stacking height

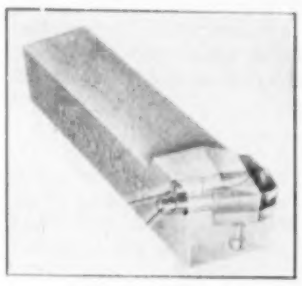
Pluslift trade names a new auxiliary attachment for the company's power lift fork truck, previously described IEN-11996-48. The attachment adds lift height of 18, 24 or 36 in. to the standard 5, 7 and 9-ft. lifts of the main hydraulically operated mast. The new hydraulic cylinder mounts in front of the main cylinder and carries the fork and fork frame. Its vertical movement becomes active first so the forks will be lifted from the ground to the capacity of the auxiliary cylinder before the main cylinder goes into operation.

The truck is driven by a four cylinder water cooled gasoline engine rating 26 hp. Drive includes a hydraulically operated clutch located accessibly back of and above the engine.

If you write maker identify as IEN - 2227

LATHE TOOL . . Carbide bit holder clamps the bit by screw adjustment

Source: WESSON CO.
1218-22 Woodward Heights Blvd., Ferndale, Mich.



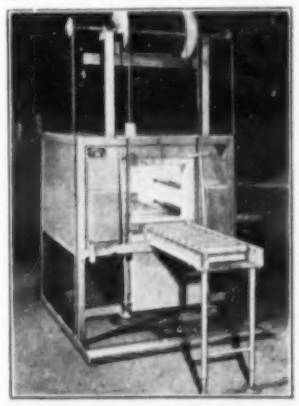
No brazing

Huski-Cut trade names a new addition to the company's line of carbide bit tool holders. It is available in three standard styles and 40 sizes. It is particularly suited for heavy feeds and high cutting speed. The bit can be adjusted by turning a screw without removing the holder from a machine. It is clamped in place by a second screw exerting direct pressure. Overall dimensions of the shank conform to standard tool specifications.

If you write maker identify as IEN - 2228

HEAT TREATING . . Electric furnace, roller hearth for heavy tools, dies

Source: PERENY EQUIPMENT CO.
891-95 Chambers Road, Columbus 12, Ohio



The door opens down

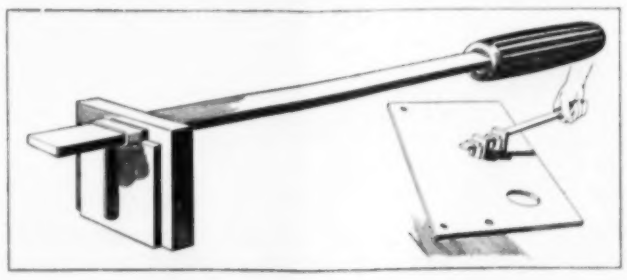
Model RH-68 is a new electric furnace featuring a roller hearth to assist in handling heavy tools and dies. The heating chamber measures 15 by 30 by 15 inches. The roller hearth is equipped with an extension in front of the door that measures 36 by 15 inches and stands 30 in. above the floor. The door is counterbalanced.

Input is 20 kw. from a 220-volt 60-cycle single-phase circuit. Operating temperature is maximum at 1,500 deg. F. Various types of heating element and automatic temperature control can be specified.

If you write maker identify as IEN - 2229

PRESS TOOLS . . Magnetic lifter to place and remove ferrous work

Source: MULTIFINISH MFG. CO.
2114 Monroe Ave., Dept. 392, Detroit 7, Mich.



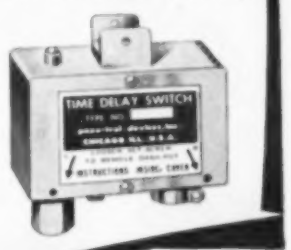
One magnet $12.50; two magnets $17.50

One or more permanent magnet heads assemble in sliding arrangement on a handle equipped bar to make up this new magnetic lifter. It can be employed to place ferrous work pieces into position in a press and to remove finished work. It will handle sheets, formed parts, castings and will remove slugs from dies. It is by company's Magnetool Division.

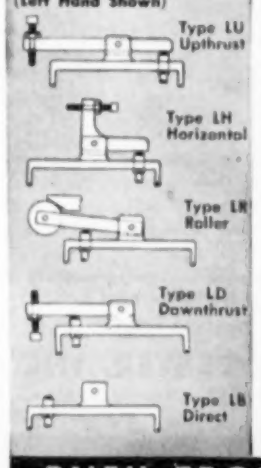
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2230

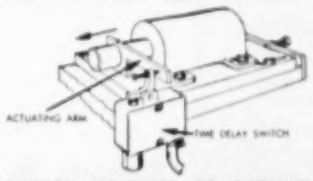
NEW CYLINDER TIME DELAY CONTROL SWITCH
INCREASES APPLICATION . . . WIDENS USE OF CYLINDER POWER



For Any Type Actuation Left or Right Hand (Left Hand Shown)



Pneu-Trol Time Delay Switches provide independent hydraulically controlled adjustable time dwell between ¼ and 60 seconds in 20 to 1 ratios. Readily mounted on machine for cylinder dwell at a positive stop. Compactly designed—a simplified low cost answer to electrical time dwell control of any air or hydraulically operated machine movement such as press work, burnishing, coating, quenching, metal-cutting, etc. Ideal for automatic feeders.
Dimensions: 4⅛" wide; 2⅜" high; 1-7/16" deep. Overall height 4⅛".



SWITCH MOUNTED TO PROVIDE DWELL AT END OF POWER STROKE

Write for descriptive literature and complete details.

PNEU-TROL DEVICES, INC.
1438 N. Keating Ave. Chicago 51, Illinois

If you write maker identify as IEN - 2231

How to get the right drill for YOUR job!

The *right drill for the job* saves you time, money—and gives you better work! Why settle for a drill that's "almost" right?

PET Superduty drills are made in 54 distinct models, each with speeds and rated power that industrial users have asked for. Result? You can choose the drill that's *exactly* right for your job!

To top it off, every PET Superduty drill is built for rugged service. Dynamically balanced armatures stop vibration. Forced ventilation keeps them cool. Precision-cut gears run smooth, stay quiet. Big reserve power makes motors last longer.

Free Catalog can save money—for YOU!

If you want details on the best in electric drills—*at prices that will come as a pleasant surprise*—get the illustrated PET Superduty catalog! For your free copy, and name of your nearest PET distributor, write today to Dept. **IE-23.**

PET POWER TOOLS

PORTABLE ELECTRIC TOOLS, INC.
320 West 83rd Street, Chicago 20, Illinois
In Canada: Portable Electric Tools, Ltd., Toronto, Ontario

If you write maker identify as IEN - 2232

standardize on standard

UNBRAKO®
SOCKET CAP SCREWS

Knurled heads for sure finger grip and fast assembly; accurate hex sockets for positive, non-slip internal wrenching; made of heat treated alloy steels. Fully formed threads, Class 3 fit. Controlled fillet and continuous grain flow assure unusual strength. Available in standard sizes from #4 to 1" in a full range of lengths. Stocked by your local industrial distributor. To save time and money, write for UNBRAKO Standards. SPS, Jenkintown 14, Pa.

Our Fiftieth Year : A START FOR THE FUTURE

UNBRAKO SOCKET SCREW DIVISION SPS JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN-2233

LIGHTNING-FAST ELECTROPUNCH

PRODUCES UP TO **10,000** PIECES PER HR.

This versatile low cost electric impact hammer produces up to 10,000 pieces per hour using automatic switching — as high as 5,000 pieces per hour with hand or foot switching. Ideal for steel stamping, inspection or identification marks on small defense parts.

ELECTROPUNCH is portable — plugs in to any 115V A. C. outlet. Lightest model (illustrated) sells for only $90.75.

ELECTROPUNCH *quickly* pays for itself. Investigate its possible applications in your plant now!

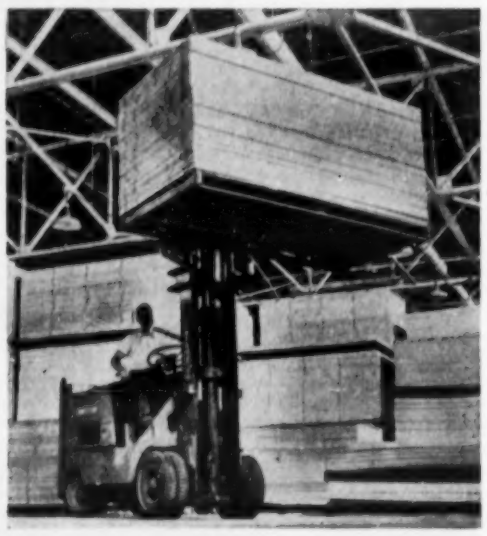
Write for descriptive folder

BLACK & WEBSTER, INC.
Dept. 17, 445 Watertown St., Newton 58, Mass.
Phone: Frank Webster Bigelow 4-6370

If you write maker identify as IEN-2234

B.F.Goodrich

TIRE AND WHEEL ANALYSIS speeds materials handling...cuts tire costs as much as 50%



● You can move more goods more efficiently at lower cost when your materials handling equipment rolls on tires of the right type, size, compound and tread design. But choosing the tires calls for a careful analysis of the kinds of equipment you use; where you operate—indoors or outside; your hauling surfaces; the kind of loads carried and any special conditions such as oily floors.

Such an analysis is a specialized, time-consuming job. That's why B. F. Goodrich offers you the Tire and Wheel Analysis Plan. Without charge or obligation, a trained BFG man will study your operations. He'll recommend the right tires for you to use. Perhaps you need a tire for better cushioning, a special cut-resistant compound, a tread design that gives better traction. Perhaps you have tire maintenance problems. Whatever your tire needs, your BFG man's recommendations will be impartial because B. F. Goodrich makes—and BFG retailers sell—a *complete* line of industrial tires.

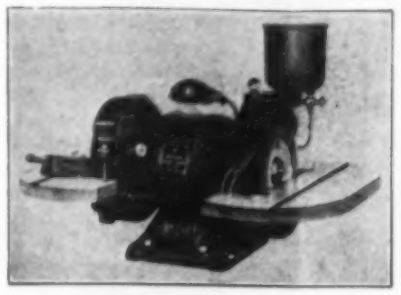
To get full power from your industrial trucks and maximum service from your tires, send in the coupon or call your BFG retailer. A special TW Analysis Plan is available for manufacturers of industrial hauling equipment.

The B. F. Goodrich Co.
Department TW-233, Akron, Ohio.
Please send me:
☐ *Additional information* on your new Tire and Wheel Analysis Plan
☐ A free copy of your "Industrial Tire Guidebook".
Name _____
Title _____
Company _____
City _____ State _____

If you write maker identify as IEN-2236

GRINDING . . Carbide tool machine takes 7 in. silicon carbide wheels

Source: THOMAS PROSSER & SON
65 South St., New York 5, N. Y.



With light and brake

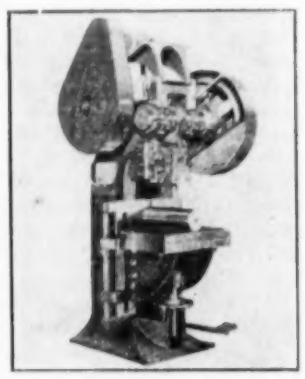
Model AA is a new machine in the company's carbide tool grinder line. It is available for bench or pedestal mounting and is equipped with a ½-hp. motor for operation at 3,450 rpm. The machine is designed to take two 7-in. silicon carbide wheels. It can be employed with diamond or aluminum oxide cup wheels. Recommended combination is a silicon carbide wheel for roughing and a diamond wheel for finishing. A lubricating device, using oil or water, can be employed with the diamond wheels.

The assembly includes two adjustable tables with index scales graduated in degrees for angle setting. Each table is mounted so its edge remains at the same point with respect to the wheel face. A protractor tool guide is supplied to slide in a slot on either table and to act as a carrier for the diamond trueing tool and feed screw. A tool and screw are available to specification. The bench mounted machine, shown in the illustration, weighs about 80 pounds. The floor mounted machine measures 17 by 25 by 45 inches. It weighs 285 pounds.

If you write maker identify as IEN-2237

PRESS . . Motor driven machine mounts table and horn, 40 ton rating

Source: DIAMOND MACHINE TOOL CO.
5109-13 Coffman-Pico Road, Pico, Calif.



Plain or geared

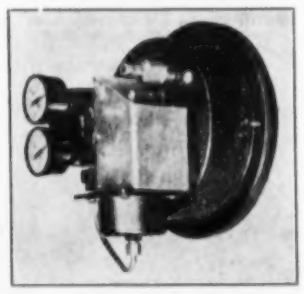
A horn assembles in a 6-in. hole in the main frame of this new 40-ton press. Beneath it is mounted a table with a screw adjustment for positioning between 6 and 18 in. beneath the ram. The table clamps in position and can be employed in place of the horn or lowered so the horn can be used. The table measures 18 by 24 in. and has a 10 by 14-in. opening. The horn extends 19 in. to the front of the frame.

Die height to the center of the horn hole measures 8 inches. An 18 by 24 by 2-in. bolster is standard equipment. Stroke can be specified between 3 and 6 inches. Ram adjustment is 2 inches. Ram area is 7 by 8 inches. The machine operates at 50 to 100 strokes per minute.

If you write maker identify as IEN-2238

CONTROL . . Pressure transmitter operates remote recorder or controller

Source: PENN INDUSTRIAL INSTRUMENT CORP.
4108-12 Haverford Ave., Philadelphia 4, Pa.



Ask for Bulletin 780

New transmitter combines a 6 or 8½-in. bourdon gage and a position-balance mechanism. It varies air output pressure in a range between 3 and 15 lb. from a 20-lb. supply line to actuate remote, indicating, recording or control equipment. The transmitter can be supplied for specified vacuum or pressure to 10,000 lb. in standard construction. In each case the output range is between 3 and 15 lb. to cover the specified overall range as read on the remote instrument.

Application of the new equipment permits short connections to the pressure gage to handle high pressures, corrosive, toxic, inflammable or other hazardous fluids or gases and to permit the use of low pressure air lines to carry the pressure indication to any point as far distant as 1,000 feet. The transmitter is suited for panel, pedestal or wall mounting.

Identify as IEN-2239

New service that will help you make your speech before the boys at the Chamber of Commerce, or at any gathering, is now available through RCA Service Company. It is known as the Teleprompter and has been in use in television shows for some time so the actors and announcers do not have to memorize their lines. The script unrolls before the speaker in a position invisible to those in front of him. It warns him of approaching close of his program time as it tells him what to say next. Speed can be regulated and the movement stopped and started again. The service includes printing the speech on the roll, supplying the instrument and an operator.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-2240

BORSUDS HEAVY-DUTY BORAX-TYPE HAND CLEANER

BORSUDS' grime-chasing agent, borax, is completely soluble — will not clog drains. Combining borax with the finest medium and low titer neutral toilet soaps, Dolge has developed a product sure to find favor with factory and office personnel alike. Agreeable to use, gentle to the skin, quick-acting against the most ingrained grime, BORSUDS comes in convenient 5-lb. packages, or in bulk for even greater economy.

Your Dolge Service Man will gladly demonstrate BORSUDS under your own shop or office conditions.

FOR FREE SANITARY SURVEY of your premises consult your DOLGE SERVICE MAN

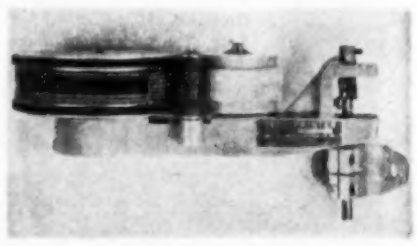
Dependable DOLGE
WESTPORT, CONNECTICUT

If you write maker identify as IEN-2241

CODE, DATE and MARK AUTOMATICALLY on your CONVEYOR LINE with the "WHIPPET" MARKER

The "Whippet" marks filled bags, cartons, boxes, rolls, cans, etc. with quickly interchangeable rubber type. Inking is through a felt roller that has self-contained reservoir. No installation problems—readily adaptable to your present conveyor system.

The "Whippet" Marker is just one of Industrial's coding and marking machines designed for more efficient marking and movement of materials on production lines. Let us help you with your problems — write today. "FREE" Catalog upon Request.



THE INDUSTRIAL MARKING EQUIPMENT COMPANY, INC.
454 Baltic Street, Brooklyn 17, N. Y. • Dept. I.E.N.
Phone MAin 4-2601

If you write maker identify as IEN-2242

This new Smith torch is foolproof. You can't go wrong.

Not even a careless or inexperienced operator can burn out the seat. Exclusive new Smith "FLO-TROL" absolutely prevents reverse flow of acetylene to cutting valve area—which causes pre-mixing and pre-ignition—which in turn burns out seats. You can't burn out a seat in this new Smith torch—it stays on the job.

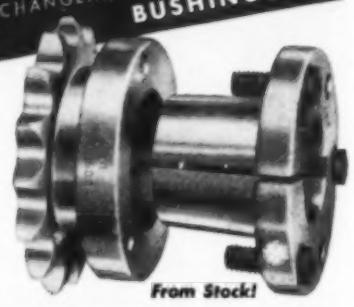
No more delays. Keep production schedules rolling. Reduce maintenance costs. Cutaway illustrates Smith's LIFELONG Welding Torch Body with LIFELONG Cutting Assembly—rugged and full size for general repair work, maintenance and manufacturing. Complete line of tips available. Write us today.

SMITH WELDING EQUIPMENT CORP.
2633 S. E. 4th, Dept. IEN-22, Minneapolis, Minn.

If you write maker identify as IEN - 2243

The New BOSTON SHOLD-A-GRIP® TAPERED INTERCHANGEABLE BUSHINGS

provide sprocket assemblies with . . .



BETTER DESIGN Bushing is attached to sprocket shoulder. No holes in sprocket itself, — retains strength, permits application of bushing to smaller sprockets.

BROADER SIZE RANGE Fit SHOLD-A-GRIP Sprocket Pinions to any shaft, ½" to 2½", quickly and easily.

STRONGER, SLIP-PROOF GRIP *Precision ground* tapered surfaces and shaft bore provide grip equivalent to pressed fit. Tests show *chain will break* before SHOLD-A-GRIP will slip.

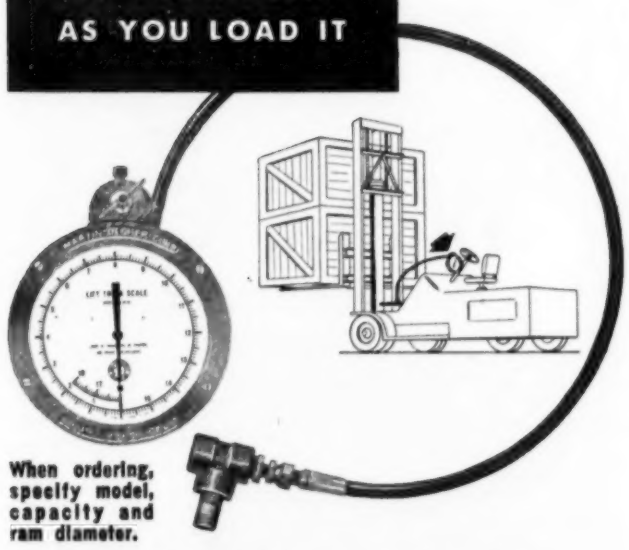
BOSTON Gear QUALITY See it, compare it for quality. Ask your Boston Gear Distributor, or write for the new SHOLD-A-GRIP folder. Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

BOSTON Gear POWER TRANSMISSION PRODUCTS

At your nearby BOSTON Gear DISTRIBUTOR

If you write maker identify as IEN - 2244

KNOW THE WEIGHT OF YOUR LOAD AS YOU LOAD IT



When ordering, specify model, capacity and ram diameter.

MARTIN-DECKER LIFT TRUCK SCALES

For any hydraulic cylinder type lift truck

The Martin-Decker Hydraulic Lift Scale fits right on any Hydraulic Cylinder Type Fork Truck. It shows the driver exactly how much weight he has picked up with the truck, thus insuring full load with safety every time. These scales are particularly advantageous where lift trucks are handling loads of varying weights.

Ideal for testing truck ratings
Permits better floor weight distribution
Safeguards elevators from overloads

Makes every lift truck automatically a scale

This device also enables a fork truck driver to keep count of the total weight loaded on a highway truck or railroad car. It is in effect a portable scale as well as a fork truck.

Safe • Accurate • Simple • Rugged • Convenient
Saves Time and Equipment • Reduces Accidents
Easy to Install • Low Cost

ECONOMICAL
Lengthens truck life. Saves truck wear, tear and maintenance. The time and equipment savings will in a short time more than pay the cost of the scales.

SAFE
Protects trucks, loads and life. Eliminates accidents. Fits into every safety program.

DEPENDABLE
These Lift Truck Scales are made by the world's leading industrial weight measurement instruments concern.

EASY TO INSTALL
No special attachments are necessary for installation. The unit is of rugged construction with an oil-filled, perpetually lubricated gauge and high-pressure, synthetic rubber-covered wire braid hydraulic hose. The scales are actuated directly by the hydraulic pressure which lifts the load, eliminating chance of error from mechanical transmission.

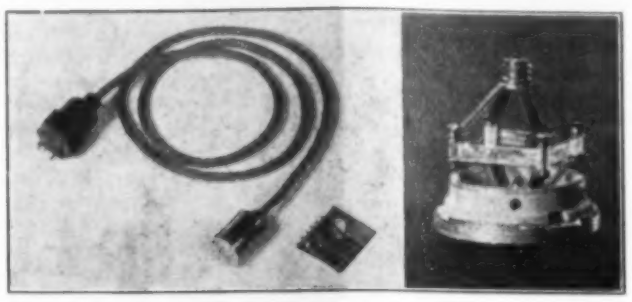
Available in six models ranging from 2,000-lb. to 18,000-lb. capacity.

MARTIN DECKER CORP. NAME OF THE WEIGHT INDICATOR
LONG BEACH, CALIFORNIA

If you write maker identify as IEN - 2246

TESTING . . Pressure transducer to actuate a meter or oscilloscope

Source: CONSOLIDATED ENGINEERING CORP.
302 N. Sierra Madre Villa, Pasadena 8, Calif.



Details in Bulletin Type 4-310

Flush diaphragm in this new Type 4-310 transducer takes the place of the pressure cylinder in the Type 4-301 unit, previously described IEN-1357-53. The assembly measures ½ in. in diameter by about ¾ in. in length. It is designed for insertion directly into a process vessel or a line carrying liquid or gas. Change in pressure against the diaphragm actuates a bridge circuit for proportional change in output voltage to a meter or oscillograph. Response is accurate to frequencies of several thousand cycles per second.

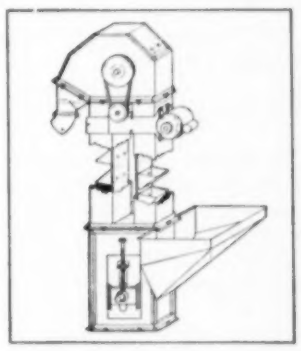
Unbonded strain gage windings make up the four arm bridge and a 10-volt ac. or dc. source is employed for bridge excitation. Output is sufficient to drive a sensitive galvanometer direct. The output can be amplified by a carrier circuit and then demodulated for recording by galvanometers of high frequency response.

The two active arms of the four arm bridge are wound around the vertical ends joining two star shaped springs. Pressure on the diaphragm which rests against a ball above the upper spring depresses the complete structure. The resultant spreading of the pins stresses and thus changes the resistance of the active arms to cause the bridge unbalance that will be precisely proportional to the pressure change. The two inactive bridge arms are wound around the base and are unaffected by change of pressure.

If you write maker identify as IEN - 2247

CONVEYING . . Bucket elevator for dry granular materials to 875 cfh.

Source: UNIVERSAL HOIST & MFG. CO.
Box 472, Cedar Falls, Iowa



Height to 50 feet

Materials flow into the buckets, mounted on the belt in this new elevating conveyor, through a hopper that forms part of the lower housing. They are elevated to the top to be dumped as the individual buckets pass over the top motor driven pulley. Belt takeup is at the bottom by turning external screws.

Two sizes employ 3 by 3¼-in. and 4 by 6-in. buckets on belts measuring 4 and 6½-in. in width. The leg, boot and hood material are 20 and 18-gage steel in the two units. The head shaft and countershaft are mounted with permanently lubricated sealed ball bearings. The boot shaft is carried on Oilite oil impregnated bearings. The driving motor is connected by V-belt to the countershaft. The elevator belt is made of rubber covered duck.

If you write maker identify as IEN - 2248

SWITCH . . Pressure operated for use in signal and control circuits

Source: BOBRICK MFG. CORP.
1837 Blake Ave., Los Angeles 39, Calif.

Series 600

A pressure line carrying hydraulic fluid, water, air, gas is connected at the right hand side of this new switch. The pressure acts upon a piston, backed by an adjustable spring, to move a bell crank through a short arc and operate a Class Z-3 Micro switch located in inverted position in the main housing. The switch is single-pole double-throw design with current rating suitable for control and signal circuits. The assembly measures about 5¾ by 1⅝ by 4¼ inches.

Piston movement is through a short stroke to minimize the effect of spring rate. The travel is limited by a positive stop. The adjustable spring is backed by a plug that threads into the end opposite the pressure connection. Eight models are included in the line. Range is from 125 to 160 lb. on the lightest rated unit. It is 4,000 to 7,500 lb. on the heaviest. Tolerance between "on" and "off" is plus or minus 5 to 25 pounds. Differential is 55 to 450 pounds. Weight is from 14 to 16 oz. depending on the pressure range and the electrical connections. Operation can be maintained in a temperature range between minus 65 and plus 250 deg. F.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

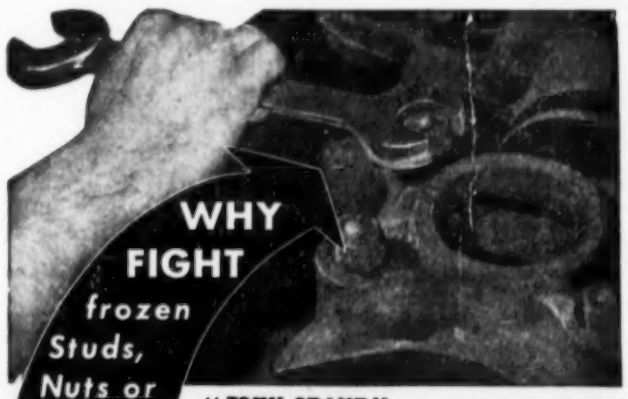
If you write maker identify as IEN - 2249

Lindberg Air or Hydraulic Cylinders provide dependable, low cost power for lifting, forcing, pulling, pressing, pushing and clamping. Ask for bulletin No. 701, "Lindberg Hydraulic Cylinders" . . or No. 731, "Lindberg Air Cylinders."

LINDBERG CYLINDERS AIR•HYDRAULIC

Lindberg Engineering Company, 2481 West Hubbard St., Chicago 12, Ill.

If you write maker identify as IEN - 2250



"JOHN CRANE" PLASTIC LEAD SEAL®

stops leaks.... prevents thread seizure

Why use a red or white lead pipe dope on your threads, when Underwriters' Approved non-hardening Plastic Lead Seal will do the job so much better?

It costs no more to use the best. The original application is no more expensive — yet it means that you can forget leakage worries...that you will never be faced with breaking a frozen connection, stud, bolt, or nut!

Make your first Plastic Lead Seal application now. Write us — we'll send a free sample.

JOHN CRANE — CRANE PACKING COMPANY
1815 CUYLER AVENUE • CHICAGO 13, ILL.

If you write maker identify as IEN - 2251

42 STOCK SIZES

HALLOWELL®

SOLID STEEL COLLARS

Your HALLOWELL industrial distributor stocks these precision machined steel collars in sizes to fit shafts from 3/16" to 3" diameter inclusive. The famous self-locking UNBRAKO Socket Set Screw—the screw that won't work loose—assures positive positioning of every HALLOWELL collar. Write for literature. SPS, Jenkintown 14, Pa.

Our Fiftieth Year : A START FOR THE FUTURE

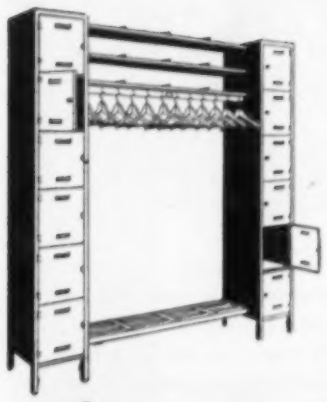
HALLOWELL POWER TRANSMISSION DIVISION

SPS JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 2252

VALET RACKS

Lockerette KEEPS WRAPS "in press"



improves health and morale—lowers absenteeism

Wraps are exposed to air and light. Employees do not face the weather in damp wraps that have been crumbled in dark lockers — do not eat soggy lunches, soaked by wet hats or gloves. Each person has his own spaced coat hanger, ventilated hat shelf and 12" x 12" x 15" deep lock box for lunches, tools and personal effects. Lockerettes save space too . . . the No. 6-12 (illustrated) accommodates 12 people in 6 feet; the No. 9-18 (3-pedestal) accommodates 18 in 9 feet.

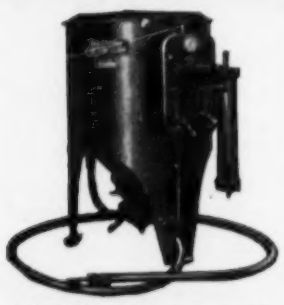
Write for Bulletin OL-5

VOGEL-PETERSON CO.
1121 West 37th St. • Chicago 9, Ill.

If you write maker identify as IEN - 2253

Here's **BIG NEWS** ON Blast Cleaning / Dust Control / Precision Finishing

Blast Cleaning Unit is PORTABLE!



Ideal for maintenance and many other jobs, including removal of rust, dirt, scale, etc. Economically cleans large objects like tanks, bridges, structural work before painting. Six sizes, stationary or portable, from **$170.00** and up.

Hydro-Finish SPEEDS POLISHING!

Removes scale and directional grinding lines . . . prepares surfaces for plating and holds tolerances to .0001"! Liquid blast reduces costly hand cleaning and finishing of molds, dies, tools, etc. Models from **$1410.00** and up.

STOP DUST at the SOURCE!

Pangborn industrial type Unit Dust Collectors trap dust at source. Machine wear is minimized, housekeeping and maintenance costs reduced. Solves many grinding and polishing nuisances and material losses. Models from **$286.00** up.

COMPACT Blast Cabinet for SMALL WORK!

Ideal for producing clean, smooth surfaces on pieces up to 60" x 36" in size. Cleans metal parts, removes rust, scale, grime, dirt, paint, etc., in a few seconds. Saves money all year 'round. Models from **$319.00** and up.

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control Equipment

Pangborn MAIL COUPON FOR DETAILS

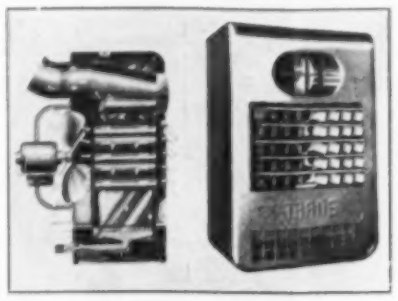
Check for more information
- ☐ Blast Cleaning Cabinets
- ☐ Blast Cleaning Machines
- ☐ Unit Dust Collectors
- ☐ Hydro-Finish Cabinets

PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.
Gentlemen: Please send me more information on the equipment I've checked at the left.
Name.....
Company.....
Address.....
City.....Zone....State.....

If you write maker identify as IEN - 2255

HEATING . . Gas fired space unit, six sizes rate to 230,000 btu. per hour

Source: TRANE CO.
2017 Cameron Ave., LaCrosse, Wis.



Ask for Bulletin DS-347

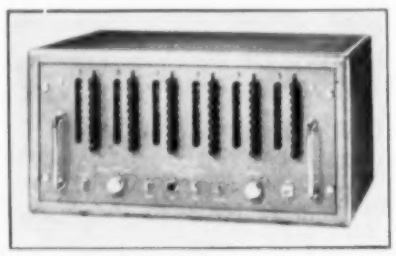
Steel tubes are assembled in staggered horizontal arrangement in the heat exchanger of this new gas fired unit heater. They are rolled into end sheets in construction similar to that employed in boiler manufacture. They are reinforced with outer and inner roll flanges. The cast iron gas burner at the bottom of the assembly fires upward so the products of combustion pass back and forth around the tubes to the outlet near the top.

Burner, pilot and control valves are combined in a removable draw type assembly so they can be drawn out for inspection and maintenance. A high limit switch prevents overheating. An automatic cut off is provided for both the pilot light and the main gas supply. An integral draft diverter by-passes down drafts around the burner so it cannot be blown out. A motor driven fan at the rear directs air through the tubes. It delivers the heated air at the front between adjustable louvers. A louver fin diffuser can be specified to provide for both lateral and vertical control of the air stream.

If you write maker identify as IEN - 2256

COUNTING . . Electronic equipment actuates circuit on preset total

Source: BERKELEY SCIENTIFIC CO.
2202 Wright Ave., Richmond, Calif.



For production control

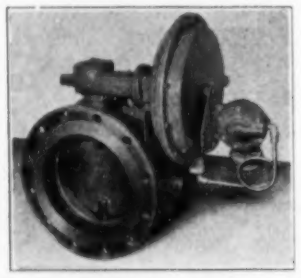
A total count is set up by operating banks of push buttons beside the decade sections in this new Model-730 preset decimal counting equipment. A knob is then turned to "counter," "recycle," or "gate" position and the unit is ready to operate. Actuation is by an electric pulse from suitable equipment. Operating speed is to 40,000 counts per second. When the preset total is reached the equipment closes a 110-volt ac. circuit to provide signal or control action.

Operation is in straight high speed counting in "counter" position. The unit will count to the preset number in "recycle" position. Then it will then reset and continue to count without losing a single pulse. In "gate" position it counts to the preset number, actuates the circuit and stops, ready to be reset manually. Assemblies with 2 to 6 counting units can be specified.

If you write maker identify as IEN - 2257

VALVE . . Diaphragm operated, holds combustion air in step with gas

Source: NORTH AMERICAN MFG. CO.
4459 E. 71st St., Cleveland 5, Ohio



12-in. unit $373

Proportioner Series 630 is a new diaphragm operated pneumatic relay actuated butterfly valve. It assembles in an air supply line paralleling a gas supply to maintain correct proportion between the two in supplying large quantities of low pressure gas and air for combustion. The valve is available for standard pipe from 4 to 16 inches. It can be employed at pressures to 5 pounds. It is operated by outside air pressure ranging from 8 to 32 oz.

The actuating relay encloses a double diaphragm to form a central interior chamber to which the operating air line is connected. The outside of one diaphragm connects to the downstream side of the gas line and the outside of the other one to the downstream side of the air line. As long as the two remain in balance there is no air flow through the relay to the operating diaphragm on the valve and the valve will hold in its set position. If unbalance occurs on either side, air will be exhausted from the diaphragm chamber or admitted to it to readjust the butterfly valve setting until balance is regained.

Identify as IEN - 2258

Plant facilities, such as heaters, air conditioners, ventilators, flush valves, light circuits, lawn sprinklers, are actuated automatically in timed intervals by new utility controls offered by International Business Machines Corporation. They are new applications of the company's standard electronic time and program equipment for addition to existing central time and program installations.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2259

Speer has been a carbon and brush specialist for over 50 years. Every Speer design is application-tested *two-ways*—in exhaustive laboratory tests and in extensive on-the-job runs—to give you

Even Wear • Improved Commutation • Reduced Vibration • Longer Brush Life

Speer brushes are made under careful quality control every step of the way—molding, extruding, baking and finishing. Speer has developed over 100 different grades of carbon-graphite, graphite, electro-graphitic and metal-graphite to suit every application—from jet engine starters to Diesel locomotive generators.

Write today for complete information

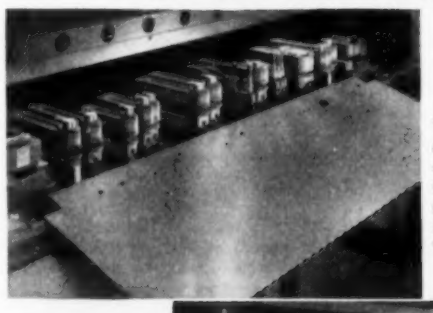
A Speer application-tested brush for every use:
motors • ignition systems
power plants
generators • rotary
convertors • power tools
starters • subways
accounting machines
windshield wipers
Diesel locomotives
household appliances

SPEER Carbon Co.
St. Marys, Pennsylvania
DIVISIONS:
Speer Resistor • Jeffers Electronics
International Graphite & Electrode

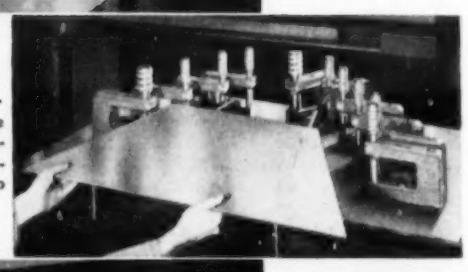
If you write maker identify as IEN - 2260

PUNCHING 1/8", 1/4" AND 3/4" THICK METAL

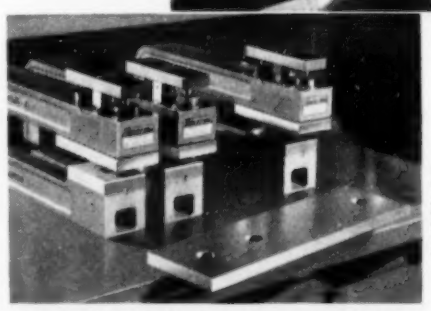
standardize on ? WALES Hole Punching Units



◀ Showing Wales Type "BL" Hole Punching and Type "N" Notching Units in a combination press brake setup for punching and notching mild steel up to 1/8" THICK.



A stamping press ▶ setup of Wales Type "CJ" Hole Punching Units for punching mild steel up to 1/4" THICK.



◀ Showing a setup of Wales Type "HS" Hole Punching Units in a press brake for punching mild steel up to 3/4" THICK.

Only Wales Hole Punching and Notching Units provide the numerous *patented features* plus the *time and cost saving advantages* that have made it "standard practice" with thousands of metal fabricators to *standardize* on this *exclusive* equipment.

Wales independent, self-contained Units eliminate costly, single-purpose custom dies, reduce expensive setup time and practically eliminate press "downtime."

The same group of Wales Units may be interchangeably set up in stamping presses and press brakes. In many cases, setups of Wales Units are in production the same day a hole punching pattern is released by your engineering department.

The multiple advantages of Wales Hole Punching and Notching Equipment are too MANY to tell here, so write for fully-illustrated, functionally colored catalogs TODAY.

WALES-STRIPPIT CORPORATION
George F. Wales, *Chairman*
361 Payne Avenue, North Tonawanda, N. Y.
(Between Buffalo and Niagara Falls)
Wales-Strippit of Canada, Ltd., Hamilton, Ontario

Specialists in Punching and Notching Equipment

If you write maker identify as IEN-2262

PRODUCTION BORING with E-Z SET by Maxwell

Only the **MAXWELL E-Z Set** boring tools feature **high speed operation, micrometer-like adjustment** to 0.0001-inch and **maximum boring range.**

Interchangeable shanks permit **E-Z Set** boring tools to be used in turret lathe, jig-bore, milling machine, boring mill, automatic or other machine tools. Because they can be adjusted for cut in only one-tenth the time formerly required by similar tools, these **Maxwell-made** tools can meet high-speed production on schedules.

E-Z Set boring tools are available in three models having maximum boring bar capacities of ½, 1 and 1½ inches and covering a boring range of from ⅜ to 20 inches.

Write today for catalog.

393-MC

THE MAXWELL COMPANY

391 Broadway • Bedford, Ohio

If you write maker identify as IEN-2263

FREE 10 DAY TRIAL OFFER

MODEL 52

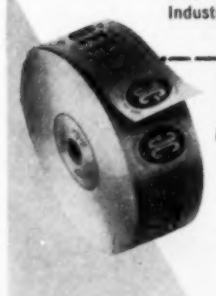
streamline your packaging operations with a

NATIONAL TAY-PER®

- **SAVE TIME** — simplified operation speeds packaging
- **SAVE LABOR** — automatic moistening control* reduces rub down time
- **SAVE MONEY** — automatic dispenser delivers any predetermined lengths, eliminates waste
- **AVOID DAMAGE CLAIMS** — positive moistening control "welds" tape to cartons for double protection

*endorsed by the Association of American Railroads and the Gummed Industries Association, Inc.

NASHUA



NASHUA PACKAGE SEALING

Div. of Nashua Corporation, Nashua, N. H.

World's largest manufacturer of tape moistening machines and gummed tape.

Please send me a National Tay-Per for a 10 day FREE trial.

Name _____

Company _____

Address _____

Dept. 22

Stop pilferage with ITSTIX® PRINTED TAPE the INFORMER TAPE!

If you write maker identify as IEN-2265

HEATING . . Liquid petroleum torch with interchangeable tips and burners

Source: BELL & GOSSETT CO.
8242 N. Austin St., Morton Grove, Ill.

Open valve and light

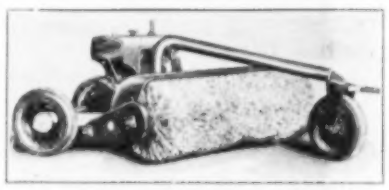
The company offers a new utility torch kit to include a Prepo torch and pressurized fuel container, previously described IEN-6418-50, with a set of six interchangeable burners and tips. Applications include soldering, paint removing, melting, fusing. The component parts are packaged in a metal carrying case.

Sufficient fuel is stored in a new container for about four hr. of steady operation. An empty container can be discarded and replaced with a filled one in a few seconds. The flame is odorless and non-toxic.

If you write maker identify as IEN-2266

CLEANING . . Engine driven sweeper, 96 in. brush, to tow behind a tractor

Source: MEILI-BLUMBERG CORP.
51 Gerlach St., New Holstein, Wis.



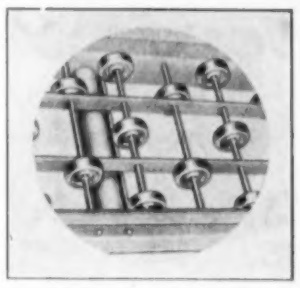
Brush rotates at 140 rpm.

Pull-Type Model 53-M is a new brush type sweeper mounted on three wheels for rotating drive by a Wisconsin gasoline engine and for travel towing behind a tractor. The brush measures 30 in. in diameter by 96 in. in width. It can be set to a 30-deg. angle to sweep a 78-in. path to either the right or left.

If you write maker identify as IEN-2267

CONVEYING . . Gravity section, steel wheels ride in aluminum frame

Source: RAPIDS-STANDARD CO.
342 Rapistan Bldg., Dept. AS, Grand Rapids 2, Mich.



Light and inexpensive

Three lengths are 5, 8 and 10 ft. and two widths are 12 and 18 in. in this new combination of ball bearing steel wheels and aluminum frame for gravity conveying service. A 5-ft. section, 12-in. in width, with 8 wheels to the foot, weighs 23 lb. and will support a 1,000-lb. distributed load. Spacing ranges from 6 to 18 wheels to the foot. The wheels themselves are ball bearing design. Curves measuring 45 and 90 deg. complete the line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

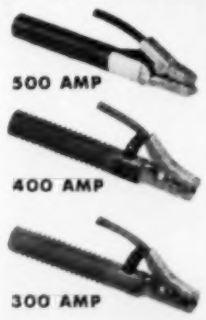
If you write maker identify as IEN-2268

...its Cooler

THE PROOF IS RIGHT IN THE PALM OF YOUR HAND

CADDY® ELECTRODE HOLDER

FULLY INSULATED MODELS



500 AMP

400 AMP

300 AMP

OTHER MODELS ON REQUEST!

FEATURES:

- CADWELD connection — cable to jaw is a 100% conductivity solid copper connection. It is permanent — cannot melt out, burn out, loosen or corrode.
- Short completely replaceable beryllium copper jaw has 80% conductivity.
- Lightweight durable steel body carries no current.
- Cable gripper prevents broken strands and flexing at the connection.
- Operator's hand is over fully insulated cable, air space and handle ribs.
- Fiberglass spring cover withstands 1200° F. heat radiation from the arc.
- NO Shocks — Handle screws eliminated.
- Replaceable fiberglass insulators.

"CADDY" ARC WELDING ACCESSORY DIVISION
ERICO PRODUCTS, INC. • 2070 E. 61st PLACE • CLEVELAND 3, OHIO

If you write maker identify as IEN-2269

A PAID NEWS ADVERTISEMENT BY UNITED LABORATORIES, INC.

NEW SURFACE FOR OLD FLOORS

"Pre-packaged" flooring makes old surfaces like new

Renew "beat-up" floors and traffic lanes with job-tested Plastic Rock. Bonds to concrete, wood or steel; perfect feather edge; spark-proof, skid-safe wet or dry; dustless, noiseless, easily cleaned; will not splinter, crumble, curl or loosen. Hundreds of tons rolling on steel wheels only pack denser; 10-year-old floors show no wear. Plastic Rock comes complete, packed in handy barrels; materials uniform in quality; no "formulae" or guesswork; simply mix and trowel (average thickness 1/2"). Maintenance crew or contractor can easily apply and have ready for use in 48 hours. Used everywhere by industry, railroads and institutions.

Plastic Rock puts shock-absorbers on your floors.

Get free bulletin "Q-2"

UNITED LABORATORIES, INC.
16803 EUCLID AVENUE • CLEVELAND 12, OHIO

If you write maker identify as IEN-2270

No. 150K SpeedWay SpeedSander KIT

Sands, Cleans, Rubs, Polishes—MOTOR-DRIVEN 3/16" ORBITAL-MOTION

No. 150 SpeedSander with powerful direct-connected, 3450 r.p.m. 110 v., A.C. air-cooled motor. No gears nor gear-housing to collect grit and dust. Sealed ball-bearings thruout. Cast-aluminum body and chrome plated—in hand weight only 5 lbs. Natural grip, all-position handle with sliding thumb switch and 3 wire rubber-covered cord. Handy, fitted, steel carrying case with accessories including: thick neoprene Contour Pad, steel Surfacing Plate, free abrasive Felts, lamb's wool Polishing Bonnet, 90 Abrasive Sheet Covers (18 each of 5 grits) and hardboard Template that cuts three 4½" x 6½" covers from standard 9" x 11" abrasive sheets.

$49.50 KIT COMPLETE

Write for Catalog

SpeedWay MANUFACTURING CO.
1885 So. 52nd Avenue • Cicero 50, Illinois

If you write maker identify as IEN-2271

Metso Cleaning...

Sparkling are the ink pots cleaned with Metso 99 Detergent. Metso wets oily ink quickly; holds it in suspension. Soluble silica, important component of Metso, prevents removed dirt from re-depositing. Get this quality of Metso 99 in your cleaning. You'll save time and money. Free trial sample on request.

Philadelphia Quartz Co.
1131 Public Ledger Building, Phila. 6, Pa.

Metso Detergents
PQ Silicates of Soda

If you write maker identify as IEN - 2272

PORTABLE HOIST

WEIGHS LESS THAN 10 POUNDS WITH A 1½ TON CAPACITY

SPECIFICATIONS

- LITTLE MULE is equipped with 13 feet of 7/32" preformed aircraft cable with a guaranteed single strength of 5,600 pounds. This permits a pull or lift of 6 feet with double cable or 12 feet with single cable. No dangling chain. When cable is rolled on drum it is safely out of the way.
- Lever that controls raising and lowering mechanism is easy to reach, easy to operate. Can be shifted while wearing heavy gloves.
- LITTLE MULE is rated at 1½ tons but has an overload capacity of about 100%. The safety feature is in the 20" handle which is engineered to bend when the hoist is overloaded.
- There are no brakes to slip as the hoist has positive acting, double-interlocking pawls.
- All materials used in the construction of LITTLE MULE are corrosion proof or highly corrosion resistant.

LITTLE MULE

IT LIFTS . . . PULLS . . LOWERS

For complete information write . . . . .

LITTLE MULE CORP.

661 S.W. 2nd Ave. Ft. Lauderdale, Fla.

If you write maker identify as IEN - 2273

NEW! Volatile Solvent

CARBON MET

A HALOGENATED AROMATIC HYDROCARBON

A specific replacement for toxic Carbon Tetrachloride

U. S. Pat. 2316843

Out and out metal dry cleaning solvent and degreaser in ready-to-use "Handy Kit" containing Patented dip and drier basket.

- For Liquid Phase Degreasing
- Quick Cutting solvent against stubborn dirt and grease.
  Much Faster Cutting than "Carbon Tet"
  Causes no Rusting . . . Leaves no Film
- Non-Explosive and relatively non-toxic.
- Fast, clean evaporation. • Non-Corrosive to metals.
- Non-Ionic . . Ideal for degreasing and cleaning electrical parts.

also economical 55 gal. size drum

IMMEDIATE DELIVERY 1 GALLON OR A TANK CAR

CURRAN CORP. Mfg. Chemists LAWRENCE MASS.

120 South Canal St.

If you write maker identify as IEN - 2274

NEW HELP

FOR USERS OF SMALL PUMPS

Write for This Book Today!

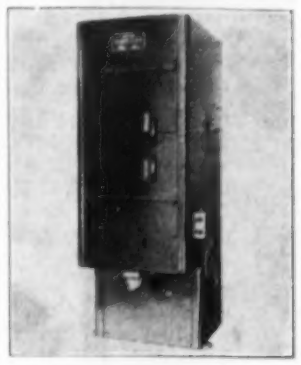
This new Tuthill Catalog No. 101 presents the complete line of Model L pumps for lubricating, hydraulic, transfer, circulating and burning oils service. It includes a special Pump Guide on Model L applications, plus specifications and performance data of help to designers, engineers and management. Write for your copy.

TUTHILL PUMP COMPANY
Dependable Pumps since 1927
939 East 95th Street, Chicago 19, Illinois

If you write maker identify as IEN - 2275

PACKAGING . . Filling machine weighs dry materials into containers

Source: HANNCONN MACHINE CO.
178-82 Lafayette St., Dept. P, New York 13, N. Y.



About $875

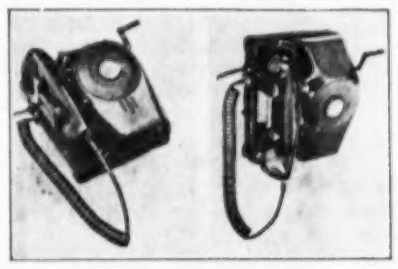
Dial-A-Matic is a new electronically controlled machine to receive dry materials from an overhead hopper and feed them by predetermined weight into containers positioned by an operator beneath a discharge spout. Two models are included in the line for either bench or floor mounting. They cover ranges from 1½ to 16 oz. and from 4 oz. to 3 pounds. Operating speed ranges from 15 to 35 deliveries per minute.

Materials flow through an opening at the top of the housing to a feeding device. It provides initial fast action followed by uniform light dribble until a predetermined amount has been reached. At this point quick acting valves shut off the flow and actuate a dumping mechanism. The weighed material is discharged to a container that has been positioned by the operator. The machine measures 18 by 24 by 53 inches. Drive is by a ¼-hp. motor operating on 110-volt 60-cycle ac. Weight is about 230 pounds.

If you write maker identify as IEN - 2276

COMMUNICATING . . Telephone, local battery unit, can be converted

Source: CONNECTICUT TELEPHONE & ELECTRIC CORP.
72 Britannia St., Meriden, Conn.



Plain or with desk cord

Wall-Desk designates this new telephone. It can be employed interchangeably on a desk or wall without alteration. Its hand set is equipped with a Koiled Kord. Base of the phone rides on rubber feet to position solidly on a desk. The new hook switch employs two sensitive enclosed switches sealed against entrance of dust and dirt. All parts of the instrument can be removed or interchanged with the aid of a screw driver.

The assembly is actually a universal local battery telephone that can be converted to a manual common battery telephone without addition of either electrical or mechanical parts. It can be converted quickly also to a common battery dial telephone by addition of a dial and bracket.

Identify as IEN - 2277

Clean pouring and return of any excess liquid through a drain-back channel feature a new pouring spout fitting to apply on standard milk bottles. There is a cap to close the spout. Included is an adapter ring to fit bottles of other size openings. The new unit is made of plastic. It is non-toxic, free from odor, easy to keep clean. J-Dapter Spout Company quotes twenty-five cents.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 2278

BIN STUCK LATELY?

BIN STUCK LATELY? BIN STUCK LATELY?

BIN STUCK LATELY?

BIN STUCK LATELY? BIN STUCK LATELY?

"Loosen it up with a quick action CLEVELAND vibrator. Type and size for any application."

Literature on request

THE CLEVELAND VIBRATOR CO.

2736 Clinton Avenue • Cleveland 13, Ohio

If you write maker identify as IEN - 2279

A PAID NEWS ADVERTISEMENT BY CARBORUNDUM COMPANY

CENTERLESS GRINDING . . . New Resilient Regulating Wheel for armature grinding and similar applications

A new aloxite aluminum oxide regulating wheel with a resilient rubber center has been developed by CARBORUNDUM for use on centerless grinders. Designed especially for work requiring light but even pressures—such as armatures—this new regulating wheel helps your operators reduce rejects considerably.

The specially constructed resilient rubber core is the secret. It permits mild deflection of the wheel needed to relieve the grinding pressures, and eliminate the faulty finish, created by conventional regulating wheels.

This resilient wheel is made in thicknesses up to 4 inches—in the standard regulating wheel grading, A80-R2-R. Its use requires no change of grinding wheel gradings.

Get complete details on this new production-booster from your CARBORUNDUM distributor today. He's listed under "Abrasives" in the yellow pages. Or, if you prefer, write us at Dept. IEN 81-36.

"Carborundum" and "Aloxite" are registered trademarks which indicate manufacture by The Carborundum Company, Niagara Falls, N. Y.

81-36

THE CARBORUNDUM COMPANY
Niagara Falls, New York

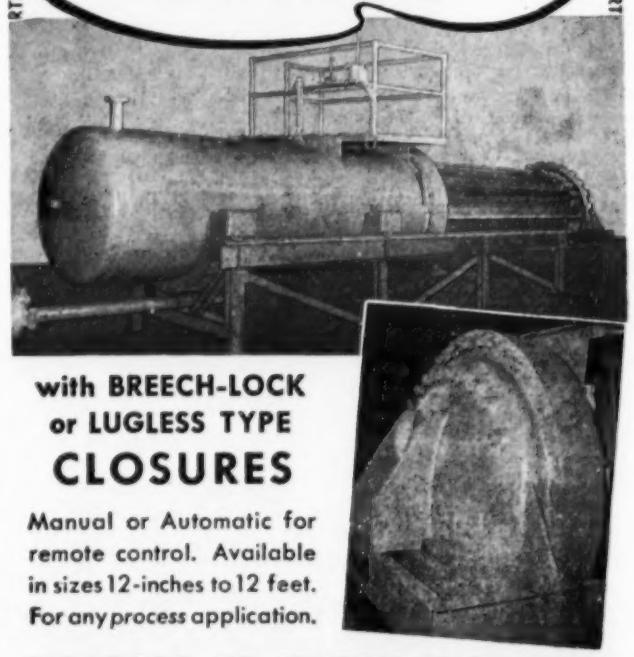
If you write maker identify as IEN - 2280

• NORTH ERIE • NORTH ERIE • NORTH ERIE • NORTH ERIE

NORTH • *Erie*

ANNOUNCES A NEW—
More Economical, Dependable
LINE OF

QUICK OPENING PRESSURE VESSELS



with BREECH-LOCK or LUGLESS TYPE

CLOSURES

Manual or Automatic for remote control. Available in sizes 12-inches to 12 feet. For any process application.

STANDARD OR CUSTOM-ENGINEERED TO FIT YOUR JOB REQUIREMENT

STATIONARY OR RETRACTABLE SHELL TYPE

Doors and Vessels meet or exceed all A.S.M.E. Code specifications.

Write for . . . NEW TECHNICAL DESCRIPTIVE *Catalog*

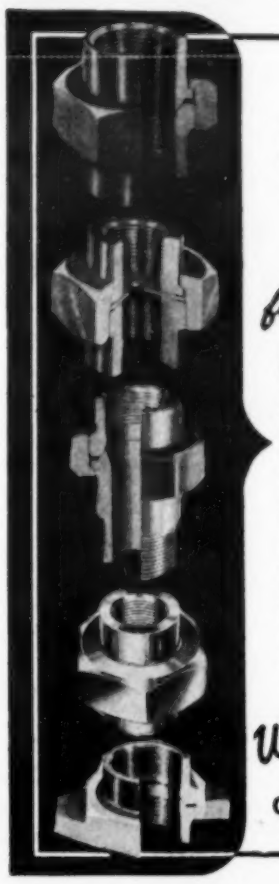
This catalog is important for new plant planning or modernization, *write today.*

NORTH *Erie*

THE H. W. NORTH COMPANY
1731 PARADE STREET • ERIE, PENNSYLVANIA

ENGINEERING CONTRACTORS DESIGNERS AND SUPPLIERS
SPECIAL PURPOSE MACHINERY AND EQUIPMENT FOR THE BASIC INDUSTRIES

If you write maker identify as IEN - 2282



A TYPE FOR EVERY USE!

Catawissa PERFECT SEAL Unions

for all temperatures for all pressures!

Catawissa Unions are HOT FORGED from solid rectangular steel bars to give sure-fire piping dependability! Exclusive Ball-to-Angle seat design gives A PERFECT SEAL EVEN WITH PIPE NOT IN ALIGNMENT!

There's a Catawissa Union for every use, temperature and pressure . . . Standard and Double Extra Heavy; Orifice; Male & Female; Full Stainless, Full Alloy; Lug Nut. Choice of seats and socket weld or screwed ends.

Write for Catalog

STOCKED BY LEADING INDUSTRIAL DISTRIBUTORS

CATAWISSA VALVE & FITTINGS CO.
30 Mill St. • CATAWISSA, PA.

If you write maker identify as IEN - 2283

Why is there a difference in ROLLER CHAINS?

For the past sixty-two years the Diamond Chain Company has continuously devoted its efforts to the attainment of higher quality in the product, and the constant expansion in the use of roller chain as a superior mechanical means of power transfer . . . Research, testing and engineering developments have always been factors of first consideration at Diamond Chain.

FOR EXAMPLE:—

1. Diamond Chain has improved the pin and bushing holes in the link plates by proper pitch hole preparation. Pins and bushings are case hardened.
2. Diamond Chain has long recognized that certain types of internal stressing of chain parts would increase fatigue resistance. To this end, link plates have been specially processed and chain rollers and other parts have been shot-peened since 1944.
3. Diamond Roller Chain is constantly improved. Time tested improvements become standard for production as soon as established and certified.
4. Fully equipped and well staffed chemical and physical testing laboratories have made it possible to control raw material specification, their treatment and processing.
5. Diamond Chain has established production processing methods and quality controls through multiple inspection to insure uniformity of high quality in continuous production runs.
6. As always the Diamond trade-mark on roller chain is the Hall Mark of Quality.

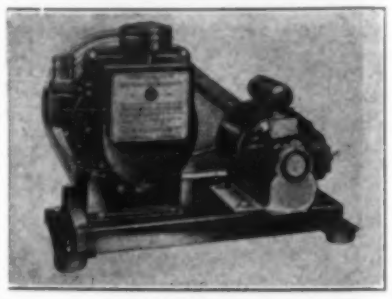
DIAMOND CHAIN COMPANY, Inc.
Dept. 465, 402 Kentucky Avenue, Indianapolis 7, Indiana
Offices and Distributors in All Principal Cities
Refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER

DIAMOND ROLLER CHAINS

If you write maker identify as IEN - 2285

PUMP . . Two stage vacuum unit guarantees pressure to 0.1 micron

Source: W. M. WELCH MFG. CO.
1513-17 Sedgwick St., Chicago 10, Ill.



$515 with motor

Free air capacity is 300 liters per min. for this new No. 1397B two-stage vacuum pump. It will evacuate a 10-liter volume to 0.1 micron in 1.23 minutes.

Operation is characterized by lack of noise and vibration and by freedom from oil back up due to a built-in trap. The design also prevents oil from being thrown out of the discharge side. Level is shown through an indicator window. A drain permits oil change without dismantling the assembly.

Drive is by a ¾-hp. 110-volt single-phase motor with double V-belt connection. Overall dimensions with the motor are 26 by 14½ by 18½ inches. Weight is 225 pounds.

If you write maker identify as IEN - 2286

TESTING . . Flexing machine tests vapor barrier packaging paper

Source: PACKAGE MATERIALS LABORATORIES INC.
459-63 Crescent Road, Hatboro 10, Pa.

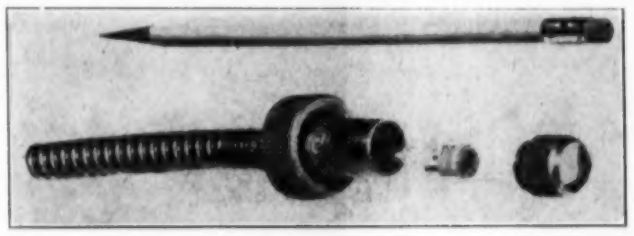
Please note our error

Our error of transposition resulted in naming an incorrect price for the company's flexing machine, IEN-599 last month. We said $375 and should have quoted $735.

If you write maker identify as IEN - 2287

CONTROL . . Photoelectric cell for burner shutdown on flame failure

Source: COMBUSTION CONTROL CO.
75-79 Broadway, Cambridge 42, Mass.

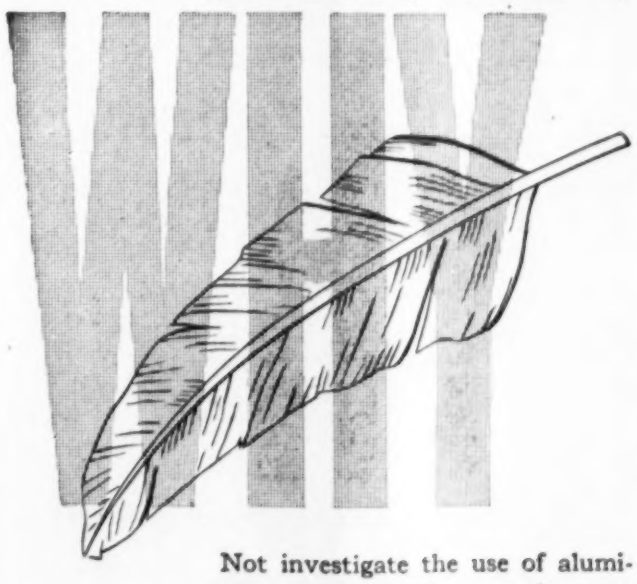


Ask for Bulletin CP511

New Scanner Type 48PT1 employs a Firetron photoelectric cell that can distinguish between the infra-red of a flame and that of other sources. The cell is about the size of a pencil eraser. It plugs into the scanner assembly for connection to associated electronic control equipment 26SJ5 or 26RP8 for manually ignited or automatically fired installations. The equipment is suited for use in connection with burners handling oil, gas, pulverized coal.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN - 2288



Not investigate the use of aluminum or magnesium castings on *your* product?

Almost a half-century of experience producing quality Well-Cast light metal castings in sand, semi-permanent and permanent mold-Well-Made Wood and Metal Patterns.

THE WELLMAN BRONZE & ALUMINUM CO.
DEPT. 9, 12800 SHAKER BLVD., CLEVELAND 20, OHIO

If you write maker identify as IEN - 2289

VALVAIR'S *New*

SOLENOID PILOT
***Air Control* VALVE**

SMALL ONLY IN SIZE, LARGE EVERY OTHER WAY!

Over 20,000,000 cycles of life may be confidently expected. We believe this valve to be the most rugged ever offered in its class. Valvair's method of sealing prevents wear on seats. Models include 2-way and 3-way either normally open or normally closed. Orifice sizes: 1/16", 3/32", 1/8"; 1/4" pipe tap. Maximum current consumption — 10 watts. For air, water, vacuum, oil or inert gases.

GET NEW BULLETIN "MQ-2"

VALVAIR CORPORATION • *Affiliate: Sinclair-Collins Valve Co.* 949 Beardsley Avenue • Akron 11, Ohio

REPRESENTATIVES IN PRINCIPAL CITIES

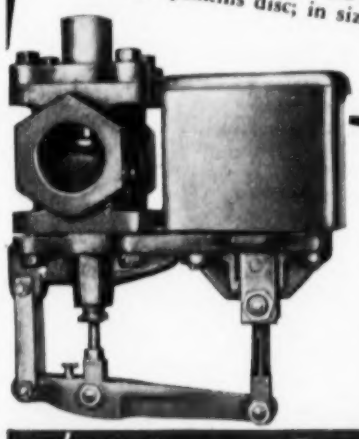
Rely Upon Valvair

If you write maker identify as IEN - 2290

JOHNSON *Direct Acting Solenoid Valve — for 150 lbs. Differential Pressure . . .*

You *can* get a solenoid valve that operates under differential pressures up to 150 lbs., temperatures to 400°F., *without pilot valves.* It ends the time lag and wiredrawing that come with slow opening—the danger of sticking that comes with auxiliary pistons. It offers unusual possibilities for all types of automatic, or remote, flow control. Johnson Solenoid Valves are available for normally closed or normally open service; with stainless steel valve and seat or Jenkins disc; in sizes from ½" to 3".

Write for Bulletin "V"



WHERE CAN YOU USE THIS AUTOMATIC VALVE?

- No pilot valves
- Temperatures to 400°F.
- Differential Pressures to 150 lbs.
- Immediate full flow
- Heavy duty construction

The Johnson Corporation

846 WOOD STREET THREE RIVERS, MICHIGAN

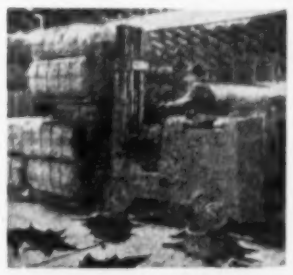
If you write maker identify as IEN - 2291

Just Read this Order:

"200 DRUMS OF STONHARD STONPACH TO BE DELIVERED OVER A PERIOD OF APPROX. 1 YEAR INITIAL SHIPMENT OF 5—650 LB. DRUMS TO BE HERE 11/21/52"

To Draw Orders Like This

STONHARD STONPACH MUST BE GOOD!



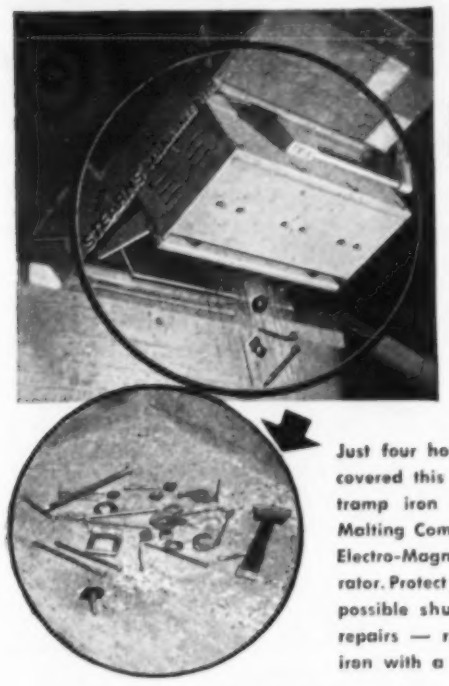
No other floor repair material can compare with STONPACH when it comes to smoothing out ruts and holes in concrete floors ruined by acid, alkalies, grease, oil or excessive water. It resists chemical reaction and sets up flint-hard at ONLY ONE-HALF INCH THICKNESS. Secondly, *all ingredients come complete in one container*—no chance for error! Write for full details today.

STONHARD COMPANY
Building Maintenance Materials since 1922
102 Stonhard Bldg., 1306 Spring Garden St., Philadelphia 23, Pa.

Please send me your STONPACH folder: 102/2/53

Name .....
Company .....
Address .....
City ..... Zone ..... State .....

If you write maker identify as IEN-2292



PROTECT YOUR MACHINERY!

Just four hours of operation recovered this amazing amount of tramp iron at the Fleischmann Malting Company with a Stearns Electro-Magnetic Spout Type Separator. Protect your machinery, avert possible shut-downs and costly repairs — remove all the tramp iron with a Stearns separator.

For complete specifications and operating data on Stearns Electro and Permanent Magnetic Spout Type Separators, write for bulletins.

Foremost in the Magnetic Field
Stearns MAGNETIC INC.
626 SOUTH 28th STREET, MILWAUKEE 46, WISCONSIN

If you write maker identify as IEN-2293

Special Self-Sticking
BRADY QUIK-LABELS

In Colors, Sizes, Shapes and Wording YOU Need!

- PRODUCTION
- INSPECTION
- INSTRUCTION
- TRADEMARKS
- PARTS & SERIAL NUMBERS

THOUSANDS OF USES throughout Industry. Brady self-sticking QUIK-LABELS can be made to your special requirements. Come on handy dispenser cards or rolls. Quickly applied—durable—silicone coated to resist dirt, grease, moisture. Low in cost, inexpensive to apply. Save time and money. Send for complete details and FREE samples of these special labels, today.

DISTRIBUTED IN 125 PRINCIPAL CITIES.

WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED ROLL TAPE · MASKS & STENCILS

MANUFACTURERS OF SELF-STICKING PRODUCTS
W.H. BRADY COMPANY
765 W. GLENDALE AVE., MILWAUKEE, WISCONSIN

If you write maker identify as IEN-2294

New Black & Decker Die Grinder Lighter, Smaller, Faster

TOWSON, MD.—A new #8 Die Grinder, featuring a smaller, powerful B&D-built motor, has been designed for easier handling and greater accuracy by The Black & Decker Mfg. Co. Weight of the tool has been cut to 2⅛ lbs.; main housing diameter to 2⅛". An extended spindle housing permits gripping the tool close to the stone for more precise work. Additional features include a no-load speed of 30,000 R.P.M. and a latest-design ¼" collet chuck. Like all Black & Decker tools, the #8 Die Grinder is built with a husky housing and top-quality parts. For demonstration, see your nearby B&D Distributor. For free literature, write: THE BLACK & DECKER MFG. CO., 608 Pennsylvania Ave., Towson 4, Md.

BLACK & DECKER #8 DIE GRINDER
$85.00

LEADING DISTRIBUTORS EVERYWHERE SELL
Black & Decker Portable Electric TOOLS

"I WISH I HAD-"

An IEN reader is waiting for an answer to each item in this column.

This column concentrates upon reader requests for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products.

It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

BORING . . "I wish we had a source from which we could purchase a used double end Heald Borematic machine in good condition. We are interested in a No. 322, No. 222 or No. 249 and are hoping for quick delivery. We are located in Edgerton, Ohio." **IEN W-8**

SURPLUS . . "I wish we had a purchaser for about 1,400 ft. of 21-gage hardware cloth, 8 by 8 mesh, galvanized after weaving. It is in roll form, 36 in. in width, about 100 ft. in length, all new material. Jacksonville, Florida." **IEN-9**

SURPLUS . . "I wish we had a buyer for 25 General Electric 1/30th hp. motors for operation on 115 volt single phase ac. at 3,000 rpm. The motors are equipped with capacitors. All are new and in storage in Aurora, Ill." **IEN W-10**

SURPLUS . . "I wish we had a purchaser for three 4-wheel-steer trailer trucks 42 in. wide by 84 in. long. They have ring and pintle hitch, 4.00 by 8 pneumatic tires, enclosed superstructure on three sides and top, inside height clearance of 60 in. with the third side open with a hinged tail gate 9 in. high. They are made by Thomas Truck & Caster Co., have never been used. They are located in Baltimore, Md." **IEN W-11**

PLEASE WATCH FOR YOURS

Certain copies of this publication for the next few months will carry a post card on the front page. It is intended for your use to make sure you still want to remain on our mailing list. Please watch for the one with your name on it.

OK or correct your name and address as they appear on the card. Please also check the questions asked. They are simple, self-explanatory, essential to our circulation audit.

If you write maker identify as IEN-2295

STEP UP YOUR PRODUCTION WITH
Controlled Ventilation

Improve working conditions in your plant by installing DeBothezat Power-Flow Roof Ventilators. Motor-driven fan in weatherproof housing, for use with or without duct systems.

Power-Flow ROOF VENTILATORS can be used either for air exhaust or intake. Available with fan wheels 12" through 48" in diameter, delivering up to 40,900 CFM.

CERTIFIED CAPACITIES
Power-Flow Roof Ventilators comply with U. S. Dept. of Commerce Standard 178-51. Capacity ratings are output of completely assembled unit, including the head. Specify Power-Flow Roof Ventilators and get all the air you pay for.

Send today for FREE CATALOG.

DeBothezat Fans
Division of AMERICAN MACHINE AND METALS, INC.
East Moline, Illinois

If you write maker identify as IEN-2296

The instrument man's
"Man Friday"

You'll never run out of uses for this high-fidelity Foxboro Portable Potentiometer. Use it to check overall accuracy of your temperature instruments and thermocouples; as a substitute temperature instrument during emergencies; for exploring temperatures not requiring continuous measurement.

Accurate to ¼ of 1% of scale. Extra-long (17") scale for close, accurate reading and *vernier dial* for precise balancing. Weighs only 12½ lbs. Rugged metal case-and-cover. Write for details. The Foxboro Company, 422 Neponset Ave., Foxboro, Mass., U.S.A.

FOXBORO REG. U. S. PAT. OFF. PORTABLE POTENTIOMETERS

If you write maker identify as IEN-2297

Are you paying too much for FILTRATION?

Our studies show that many companies are. And over-filtration is usually the cause.

For example, a micronic filter is highly desirable for certain purposes—but maybe you don't need such fine particle removal. Cuno's AUTO-KLEAN, the modern disc-type strainer, may do the same job and save you money in maintenance costs. (We make three types of filters and strainers—disc, micronic, and wire-wound—so we can give an impartial recommendation covering your needs.)

Find out whether you're getting your money's worth out of your filter. Let Cuno's free filter engineering service work for you.

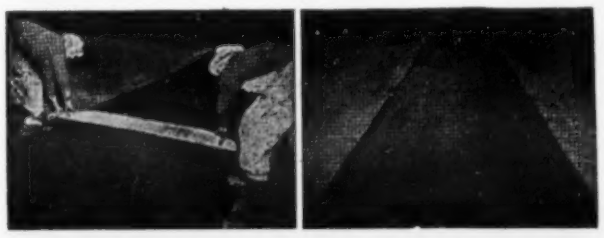
Write now for our filtration analysis form, have one of your engineers fill it out, and mail it to us. We'll let you know exactly what you need—with no obligation on your part. Cuno Engineering Corp., Dept. 697A South Vine Street, Meriden, Connecticut.

CUNO ENGINEERED FILTRATION

If you write maker identify as IEN-2298

NEW FLOORS IN 24 HOURS

FLOORS LAID TODAY • READY FOR USE IN 24 HOURS



Install "PERMAFLEX" HARD MASTIC any thickness required over Old Rough Concrete or Wood Floors, Aisles, Platforms, Walks or Drives. INTERIOR OR EXTERIOR. Edges are splayed to a feather edge.

3000 LBS. PRESSURE PER SQ. IN. WILL NOT RUT

No Dust • No Chipping • No Delays to Production

We Contract for Complete Installations

Prices Are Amazingly Low

Over 2,000 SATISFIED USERS INCLUDE: General Electric — Westinghouse — U. S. Steel — General Motors — Chrysler — Atlantic Steel — A. O. Smith — Leading R. R. and Warehouse Companies

PERMAFLEX FLOORS ARE
- Heavy Duty
- Dustproof
- Slipproof
- Waterproof
- Fire Resistant
- Non-Tiring
- Warm & Quiet
- Sanitary

SALES:—
Atlanta—Main 4110
Baltimore—Belmont 3770
Chicago—Fulton 5-4666
Detroit—Tuxedo 5-5500
New York—Wis. 7-5474
Norfolk—2-9035
St. Louis—Lucas 3700
San Francisco—Gar. 1-3196

INSTALL COMPLETE 15c per square foot

PERMAFLEX PRODUCTS COMPANY
1846 NORTH FRONT STREET, PHILA. 22, PA.